TOSHIBA

FILE NO. 050-200221

SERVICE MANUAL

PLASMA MONITOR

50HP82,50XP26H
50XP26K,50XP26R

DOCUMENT CREATED IN JAPAN, Sept., 2002

CONTENTS

SAFETY PRECAUTIONS 2-1

USER'S MANUAL 3-1

TROUBLESHOOTING 4-1

METHOD OF ADJUSTMENTS 5-1

METHOD OF DISASSEMBLY 6-1

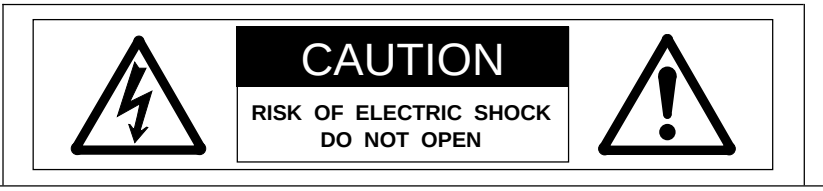
PACKAGING 7-1

PART LIST 8-1

CONNECTION DIAGRAMS 9-1

BLOCK DIAGRAM 10-1

SAFETY PRECAUTIONS



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT OPEN REAR COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside of this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included.
Therefore, it should be read carefully in order to avoid any problems.

ATTENTION: POUR EVITER LES RISQUES D' ELECTROCUTION, NE PAS ENLEVER LE CONVERCLE ARRÈRE. AUCUN DES ELEMENTS INTERNES NE DOIT ETRE REPARE PAR L'UTILISATEUR. NE CONFIER L' ENTRETIEN QU'A UN PERSONNEL QUALIFIE.

L'éclair fléché dans un triangle équilatéral est destiné à avertir l'utilisateur de la présence, dans l'appareil, d'une zone non-isolée soumise à une haute tension dont l'intensité est suffisante pour constituer un risque d'électrocution.

Le point d'exclamation dans un triangle équilatéral est destiné à attirer l' attention de l'utilisateur sur la présence d'informations de founctionnement et d'entretien importantes dans la brochure accompagnant l'appareil.

WARNING
HEATSINK MAY BE ENERGIZED.
TEST BEFORE TOUCHING.

SAFETY PRECAUTIONS

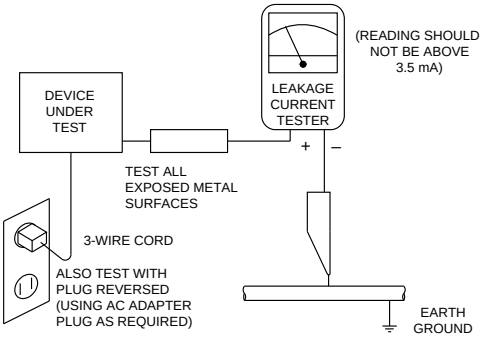
1. **Before returning an instrument to the customer**, always make a safety check of the entire instrument, including, but not limited to, the following items.

   a. Be sure that no built-in protective devices are defective and/or have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including,but not limited to, nonmetallic control knobs,insulating fishpapers,adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning.**

   b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such opening include,but are not limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.

   c. **Leakage Current Hot Check** — With the instrument completely reassembled,plug the AC line cord directly into a 240V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institutes (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories(UL) 1950. With the instrument AC switch first in the ON position and then in the OFF position, measure from a known earth ground (metal waterpipe, conduit,etc.) to all exposed metal parts of the instrument(antennas, handle bracket, metal cabinet, screwheads, metallic overlays, control shafts,etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 3.5 milliamp. Reverse the instrument power cord plug in the outlet and repeat test.**ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER.**

AC Leakage Test



2. Read and comply with all caution and safety-related notes on or inside the Monitor cabinet, on the Projection Monitor chassis, or on the picture tube.

3. **Design Alteration Warning** — Do not alter or add to the mechanical or electrical design of this unit. Design alterations and additions, including, but not limited to, circuit modifications and the addition of the items such as auxiliary audio and/or video output connections might alter the safety characteristics of this Monitor and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and will make you,the servicer,responsible for personal injury or property damage resulting therefrom.

4. **Hot Chassis Warning — a.** Some MultiSync Monitor chassis are electrically connected directly to one conductor of the AC power cord and may be safely serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground. **b.** Some Plasma chassis normally have 85V AC (RMS), between chassis and earth ground regardless of the AC plug polarity. These chassis can be safely serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection. **c.** Some Plasma chassis have a secondary ground systems in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground system are electrically separated by insulating material that must not be defeated or altered.

SAFETY PRECAUTIONS

5. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: **a.** near sharp edges, **b.** near thermally hot parts—be sure that leads and components do not touch thermally hot parts, **c.** the AC supply, **d.** high voltage, and **e.** antenna wiring. Always inspect in all areas for pinched, out-of-place, or frayed wiring. Do not change spacing between components, and between components and the printed-circuit board. Check AC power cord for damage.

6. Components,parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally,determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

7. **PRODUCT SAFETY NOTICE** —Many MultiSync Monitor electrical and mechanical parts have special safety-related characteristics some of which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified in this service data by shading with a ⚠ mark on schematics and by shading or a ⚠ mark in the parts list. Use of a substitute replacement part that does not have the same safety characteristics as the recommended replacement part in this service data parts list might create shock, fire, and/or other hazards.

PRECAUTIONS DE SECURITE

1. Avant de remettre un appareil à un client, faire toujours d'abord un examen de sécurité de l'appareil en entier comprenant, mais ne s'y limitant pas les points cités ci-dessous:

a. Vérifier qu' aucun des dispositifs de protection ne soit défectueux ou n' ait été endommagé pendant les travaux.

(1) Les volets protecteurs sur ce châssis ont été montés pour protéger aussi bien le technicien que le client. Remplacer correctement tous les volets protecteurs manquants, aussi bien que ceux qui ont pu être enlevés pour la commodité des travaux.

(2) Quand vous remettez le châssis ou d'autres assemblages ensemble dans le coffret, vérifier qu' ont été remis à leur place tous les dispositifs de protection, comprenant mais ne s' y limitant point, les boutons de contrôle non-métalliques, les feuilles d'isolation, les couverture/volets de l'ajustement et du compartiment, et l'isolation des réseaux résistance/condensateur. **Ne pas travailler sur cet appareil ni permettre qu'y soit effectué un travail sans que tous les dispositifs de protection n' y soient correctement installés fonctionnants.**

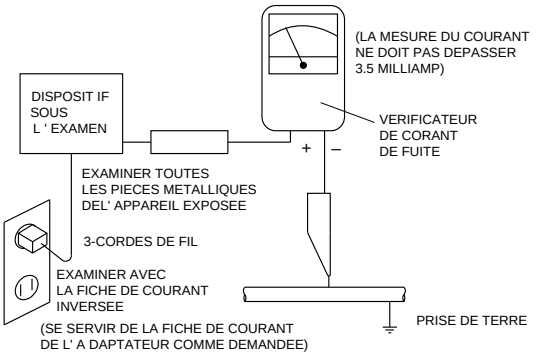
b. Bien vérifier qu'il n'y ait aucune ouverture sur le coffret qui ne puisse permettre à un adulte ou à un enfant d'y faire pénétrer ses doigts et attraper une décharge électrique.

De telles ouvertures comprendraient sans pour autant s'y limiter (1) l'espace entre le tube à images et le coffret de l'eppareil, (2) les espaces excessivement ouverts pour la ventilation et (3) la couverture arrière du coffret improprement fixée ou incorrectement protegée.

c. **Vérification de courant de fuite**

L'appareil ayant été complètement réassemblé, brancher-le à une prise de courant de 240V. (Ne pas se servir d'un transformateur d'isolation pendant ce test). Se servir d'un vérificateur de courant d'excitation ou d'un système de mesure conforme aux normes ANSI (American National Standards Institute) C101.1 Leakage Current for Appliances et U. L (Underwriters Laboratories) 1950. Le bouton de l'appareil en position "Marche" et ensuite en position "Arrêt", mesurer à partir d'une prise de terre (métallique tuyauterie, conduite, etc...) à toutes les pièces métalliques de l'appareil exposées (antennes, poignet métalliques, coffren métallique, tête des vis, surfaces métalliques, traits de contrôle, etc.) surtout à toutes les pièces métalliques exposées qui peuvent reconduire le courant au châssis. En aucun cas, la mesure du courant ne doit dépasser 3.5 milliamp. Inverser la fiche de courant de l'appareil dans la prise et répéter le test. **Tout mesurage ne s'arrêtant pas aux limites spécifiées icicomporte un risque de décharge électrique dangereux, qui doit être éliminé, avant que l'appareil ne soit remis au client.**

EXAMEN DE COURANT
D'EXCITATION



2. Lire et respecter toutes les mises en garde et notes de sécurité à l'intérieur ou à l'extérieur du coffret du rétro-projecteur, sur le châssis du rétro-projecteur ou sur le tube à images.

3. Mise en garde contre la modification du dessin

Ne pas modifier ni ajouter à la pièce mécanique ou électrique du modèle. Des modifications ou additions, comportant, mais ne s'y limitant pas, des modifications des circuits et l'addition d'éléments tels que des auxilliairs audio et/ou des branchements pour la prise de vidéo, pourrait éprouver la sécurité de ce rétro-projecteur et créer un risque pour l'utilisateur. Tout changement ou addition accomplie annulera la garantie du fabricant et va rendre votre service d'entretien, responsable des dommages corporels ou de biens en résultant.

4. Mise en garde contre le châssis sous tension

a. Certains châssis de rétro-projecteur sont électriquement reliés à un conducteur du fil de courant et ainsi peuvent ne comporter aucun risque sans un transformateur d'isolation seulement si la prise de courant est branchée, de manière que le châssis est relié à la prise de terre de la source de courant. Pour s'assurer que la prise de courant est correctement insérée, relever les mesures avec un voltmètre de courant entre le châssis et un point de prise de terre bien connu. Si le voltage indiqué est supérieur à 1,0V, débrancher et reinsérer la prise de courant dans la polarité contraire et une fois de plus remesurer le voltage potentiel entre le câssis et la prise de terre.

b. Certains châssis de moniteur ont habituellement 85V (RMS) entre le châssis et la prise de terre, en fonction de la polarité de la prise de courant. Ces châssis peuvent ne comporter aucun risque seulement avec un transformateur d'isolation inséré dans la ligne de puissance située entre de rétro-projecteur et la source d'électricité, cela pour la protection aussi bien du personnel que du matériel de vérfication.

c. Certains châssis de rétro-projecteur ont un système secondaire de masse en addition avec le système principal de masse du châssis. Ce système secondaire de masse n'est pas isolé du courant électrique. Les deux systèmes sont électriquement séparés par du matériel d'isolation qu' on vérifiera bien qu'il ne soit ni altéré ni défectueux.

5. Vérifier la couverture originale en plomb. Accorder la plus grande attention à la couverture de plomb notamment aux endroits ci-dessous indiqués.
   a. Près des bords aigus
   b. près des parties très chaudes
      Vérifier que les composants et les plombs ne touchent pas les parties très chaudes telles que:
   c. l'alimentation du courant
   d. la haute tension
   e. les fils de l'antenne

   Pousser l'inspection, à tous les endroits, à la recherche des cordes pincées, déplacées ou effilochées. Ne pas changer l'écartement entre composants, et entre composants et le tableau de circuit imprimé. Vérifier que le fil de conduite électrique est en bon état.

6. Les composants, parts (pièces) et/ou fils qui ont été trouvés surchauffés devraient être remplacés avec les composants, pièces et fils s'y reliant avec d'autre qui ont les mêmes spécifications que les originales. De plus, rechercher la cause du surchauffement et/ou des dommages et si nécessaire, prendre les mesures propres pour prévenir tout risque potentiel.

7. Note sur sûreté de l'appareil

Beaucoup de pièce de rétro-projecteur, qu'elles soient électriques ou mécaniques, ont des dispositions de sécurité qui ne sont pas toujours évidentes d'une simple inspection visuelle et la protection qu'elles donnent nécessairement ne pourront être pas obtenues par les remplaçants avec des composants aux voltages ou watts plus élevés.

Les pièces qui ont des caractéristiques particulières de sécurité sont identifiées avec un trait ⚠ marqué sur les schémas et sont ombragés ou comportent un trait ⚠ sur la liste des pièces. L'utilisation d'un produit substitutif qui n'aurait pas les mêmes caractéristiques comme il est recommandé dans ces données d'entretien pourrait provoquer une décharge électrique, un feu, et/ou d'autres dangers.

SAFETY PRECAUTIONS

1 . Cautions for disassembly

(1) For the suspension-type set (No. of workers: 3 to 5 including assistants)

- Take adequate measures in order not to damage the surface of the set or the filter, using a protection mat (vinyl sheet or blanket).
- When relieving the set from the condition of suspension from the ceiling, do not tilt its main body too much by supporting its both sides, while the mounting hooks (top and bottom) are released. (Reasons: If the main body is positioned slantwise, a load is applied to its upper part and there can be danger of making the set fall down carelessly when the set is unhooked.)
- During disassembly, the allocation of personnel should be such that suitable stands or platforms are assuredly arranged to enable the personnel to support the set, standing on both sides of the set. For safety, it is preferable to provide for assistant personnel who can receive the removed set.
- During this removal work, support the set at its frame with hands. Never touch the filter or glass surface. Assistant personnel on the front side should apply hands to the lower part of the casing. [If the casing is strongly hit with a wooden hammer or the like, the unseen side area of the module panel glass may be broken even though the module itself does not seem to have been broken . Therefore , support the frame by hand in order not to drop it.]

(2) For the wall-hang type, corner type, or pole unit mounting set (No. of workers: 2 <generally>)

- Examining a good timing, release the mounting hooks (top and bottom) from the right and the left.
- If the set is installed in an elevated place, provide for firm scaffolds in advance. It is preferable to ask for the support of assistant personnel as in the case of the suspension type.
- During this removal work, try to support the set at its frame with hands. Never touch the filter or glass surface. Assistant personnel on the front side should apply hands to the lower part of the casing. [If the casing is strongly hit with a wooden hammer or the like, the unseen side area of the module panel glass may be broken even though the module itself does not seem to have been broken. Therefore, support the frame by hand in order not to drop it.]

2. The least minimum caut ions for product disassembly

- Secure a working space, arranged as wide as possible.
- Prior to disassembling the set, protect the acrylic surface with an air mat or the like.
- To prevent the thread ridges from being damaged, use an adequate screwdriver.
- Many screws are actually used. Therefore, use two or three containers where these screws can be kept . Never disassemble the inner parts of the module (pipes, etc.).
- When lifting the module from the set, two persons should stand on both sides of the module to hold the stable parts of the junction while they lift the module upright. (If dust or such foreign substance enters in between the module and the filter, moir* or similar problems can arise. In addition, once it enters, it is necessary to take careful measures not to damage the contamination area while removing contaminants.) [Please understand that the replacement of the module may call for an air-blast treatment (air brush) in a clean room.]
  Complementary caution) In particular, if a conductive foreign matter (such as a metallic chip) is attached to the flexible cable of the module, there can be danger of the occurrence of a phenomenon like wire breakage that is caused by partition breakdown in the module. For this reason, it is necessary to bear in mind that the flow of air blast should be directed only in the predetermined direction at all times.

3. Method of returning the set (when returning the set to the manufacturing base in Japan)

- When returning the set, put the set in the specified package box.
  Otherwise, swinging and vibration loads may be applied to the set during transportation, and this may give rise to destruction of a mounting section, such as gas-hermetically-sealed pipe (glass) of the module.
- When optional parts are also put in the box for returning, a list of options (accessories) should also be produced and returned, if possible. This arrangement is effective to confirm the owner of the returned items.
- To confirm the user-oriented problem, and for the purpose of future improvements, a report of reasons for malfunction should also be packed.
  A definite address should be specified so that the repaired set can be returned and faulty phenomena can be confirmed .

(Notes)

The component by the name of “module” used in this product is defined as a section that is provided with a digital circuit board (including high-voltage parts) used to emit light in the glass panel part, excluding the surface acrylic filter or the tempered glass filter. It must be noted that it does never mean the glass panel part only.

TOSHIBA

OWNER'S MANUAL

PLASMA MONITOR

50HP82
50XP26H
50XP26K
50XP26R

© 2002 TOSHIBA CORPORATION
All Rights Reserved

Important Information

Precautions

Please read this manual carefully before using your Toshiba plasma monitor and keep the manual handy for future reference.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside of this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

WARNING

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO DO NOT USE THIS UNIT'S POLARIZED PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS, UNLESS THE PRONGS CAN BE FULLY INSERTED. REFRAIN FROM OPENING THE CABINET AS THERE ARE HIGH-VOLTAGE COMPONENTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warnings and Safety Precaution

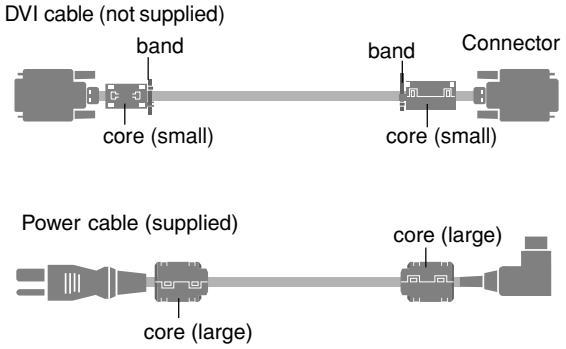
The Toshiba plasma monitor is designed and manufactured to provide long, trouble-free service. No maintenance other than cleaning is required. Use a soft dry cloth to clean the panel. Never use solvents such as alcohol or thinner to clean the panel surface.

The plasma display panel consists of fine picture elements (cells). Although Toshiba produces the plasma display panels with more than 99.99 percent active cells, there may be some cells that do not produce light or remain lit.

For operating safety and to avoid damage to the unit, read carefully and observe the following instructions. To avoid shock and fire hazards:

1. Provide adequate space for ventilation to avoid internal heat build-up. Do not cover rear vents or install the unit in a closed cabinet or shelves.
   The unit is equipped with cooling fans. If you install the unit in an enclosure, make sure there is adequate space at the top of the unit to allow hot air to rise and escape. If the monitor becomes too hot, the overheat protector will be activated and the monitor will be turned off. If this happens, turn off the power to the monitor and unplug the power cord. If the room where the monitor is installed is particularly hot, move the monitor to a cooler location, and wait for the monitor to cool for 60 minutes. If the problem persists, contact your Toshiba dealer for service.
2. Do not use the power cord polarized plug with extension cords or outlets unless the prongs can be completely inserted.
3. Do not expose the unit to water or moisture.
4. Avoid damage to the power cord, and do not attempt to modify the power cord.
5. Unplug the unit during electrical storms or if the unit will not be used over a long period.
6. Do not open the cabinet which has potentially dangerous high voltage components inside. If the unit is damaged in this way the warranty will be void. Moreover, there is a serious risk of electric shock.
7. Do not attempt to service or repair the unit. Toshiba is not liable for any bodily harm or damage caused if unqualified persons attempt service or open the back cover. Refer all service to authorized Service Centers.

NOTE:
When you connect a computer to this monitor, attach the supplied ferrite cores. If you do not do this, this monitor will not conform to mandatory FCC standards.
Attaching the ferrite cores:
Set the ferrite cores on both ends of the DVI cable (not supplied), and both ends of the power cable (supplied).
Close the lid tightly until the clamps click.
Use the band to fasten the ferrite core (supplied) to the DVI cable.



To avoid damage and prolong operating life:

1. Use only with 120V 50/60Hz AC power supply. Continued operation at line voltages greater than 120 Volts AC will shorten the life of the unit, and might even cause a fire hazard.
2. Handle the unit carefully when installing it and do not drop.
3. Set the unit away from heat, excessive dust, and direct sunlight.
4. Protect the inside of the unit from liquids and small metal objects. In case of accident, unplug the unit and have it serviced by an authorized Service Center.
5. Do not hit or scratch the panel surface as this causes flaws on the surface of the screen.
6. For correct installation and mounting it is strongly recommended to use a trained,authorized dealer.
7. As is the case with any phosphor-based display (like a CRT monitor, for example) light output will gradually decrease over the life of a Plasma Display Panel.

Recommendations to avoid or minimize phosphor burn-in

Like all phosphor-based display devices and all other gas plasma displays, plasma monitors can be susceptible to phosphor burn under certain circumstances. Certain operating conditions, such as the continuous display of a static image over a prolonged period of time, can result in phosphor burn if proper precautions are not taken. To protect your investment in this plasma monitor, please adhere to the following guidelines and recommendations for minimizing the occurrence of image burn:

* Always enable and use your computer's screen saver function during use with a computer input source.
* Display a moving image whenever possible.
* Change the position of the menu display from time to time.
* Always power down the monitor when you are finished using it.

If the plasma monitor is in long term use or continuous operation take the following measures to reduce the likelihood of phosphor burn:

* Lower the Brightness and Contrast levels as much as possible without impairing image readability.
* Display an image with many colors and color gradations (i.e. photographic or photo-realistic images).
* Create image content with minimal contrast between light and dark areas, for example white characters on black backgrounds. Use complementary or pastel color whenever possible.
* Avoid displaying images with few colors and distinct, sharply defined borders between colors.

Contents

How to Attach Options to the Plasma Monitor 1

Introduction 2
- Introduction to the Plasma Monitor 2
- The features you'll enjoy include: 2
- Contents of the Package 2
- Options 2

Part Names and Function 3
- Front View 3
- Rear View / Terminal Board 4
- Remote Control 5
  - Battery Installation and Replacement 6
  - Using the wired remote control mode 7
  - Operating Range 7
  - Handling the remote control 7

Installation 8
- Connecting Your PC or Macintosh Computer 9
- Connections with Equipment that has a Digital Interface ... 9
- Connecting Your Document Camera 9
- Connecting Your VCR or Laser Disc Player 9
- Connecting Your DVD Player 9
- External Speaker Connections 10
- Pin Assignments and Signal Levels for 15 pin RGB (Analog) 11
- Pin Configuration and Signal of the RGB 3 IN Connector (DVI Connector) 11

Basic Operations 12
- POWER 12
  - To turn the unit ON and OFF: 12
- VOLUME 12
  - To adjust the volume: 12
- MUTE 12
  - To cancel the sound: 12
- DISPLAY 12
  - To check the settings: 12
- DIGITAL ZOOM 12
- AUTO ADJUST 12
  - To adjust the size or quality of the picture automatically: 12
- OFF TIMER 13
  - To set the off timer: 13
  - To check the remaining time: 13
  - To cancel the off timer 13

WIDE Operations 14
- Watching with a wide screen (manual) 14
  - When watching videos or digital video discs 14
  - When watching high definition video source 14
- Watching computer images with a wide screen 15
  - When "PICTURE SIZE" is set to "OFF" 15

MULTI SCREEN Operations 16
- Showing a couple of pictures on the screen at the same time 16
  - Operations in the Side-by-side mode 16
  - Operations in the Picture-in-picture mode 17
  - Selecting the input signals to be displayed 17
  - Adjusting the OSM controls 17

OSM Controls 18
- Menu Operations 18
- Picture Settings Menu 20
  - Adjusting the picture 20
  - Setting the picture mode according to the brightness of the room 21
  - Setting the color temperature 22
  - Adjusting the color to the desired quality 23
  - Reducing noise in the picture 24
- Sound Settings Menu 25
  - Adjusting the treble, bass and left/right balance 25
- Screen Settings Menu 26
  - Adjusting the Position, Size, Fine Picture, Picture Adj 26
- Function Settings Menu 27
  - Setting the on-screen menu 27
  - Adjusting the position of the menu display 28
  - Setting the power management for computer images 29
  - POWER/STANDBY indicator 30
  - Setting the gray level for the sides of the screen 31
  - Setting the picture to suit the movie 31
  - Setting RGB3 ADJ. 32
  - Reducing burn-in of the screen 32
  - Setting the time for "INVERSE" 33
  - Setting the time for "SCREEN WIPER" 34
  - Resetting to the default values 35
- Options Settings Menu 36
  - Setting the allocation of the audio connectors 36
  - Setting the BNC connectors 36
  - Setting a computer image to the correct RGB select screen 37
  - Setting high definition images to the suitable screen size 38
  - Setting the picture size for RGB input signals 38
- Information Menu 39
  - Checking the frequencies, polarities of input signals, and resolution 39
  - Setting the language for the menus 39
  - Setting the video signal format 40

External Control 41

Table of Signals Supported 55
- Supported resolution 55

Troubleshooting 57

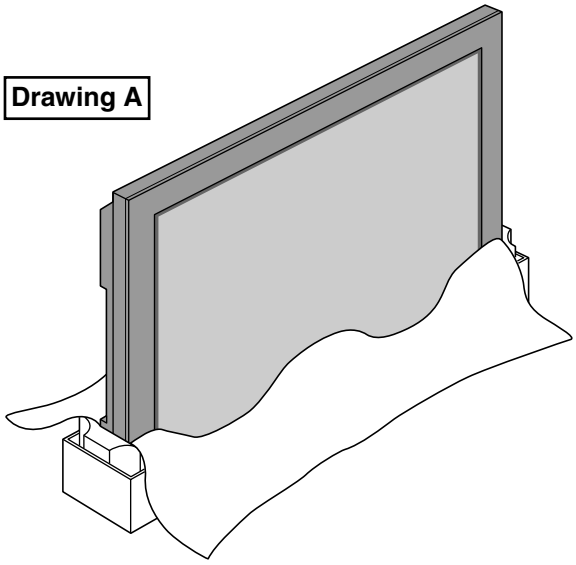
Specifications 58

How to Attach Options to the Plasma Monitor

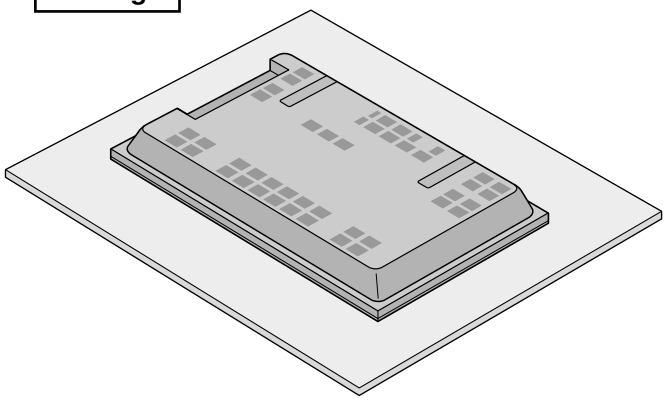
You can attach your optional mounts or stand to the plasma monitor in one of the following two ways:

* While it is upright. (See Drawing A)
* As it is laid down with the screen face down (See Drawing B). Lay the protective sheet, which was wrapped around the monitor when it was packaged, beneath the screen surface so as not to scratch the screen face.

Drawing A



Drawing B



- **This device cannot be installed on its own. Be sure to use a stand or original mounting unit. (Wall mount unit, Stand, etc.)**

*** See page 2.**

- **For correct installation and mounting it is strongly recommended to use a trained, authorized Toshiba dealer.**

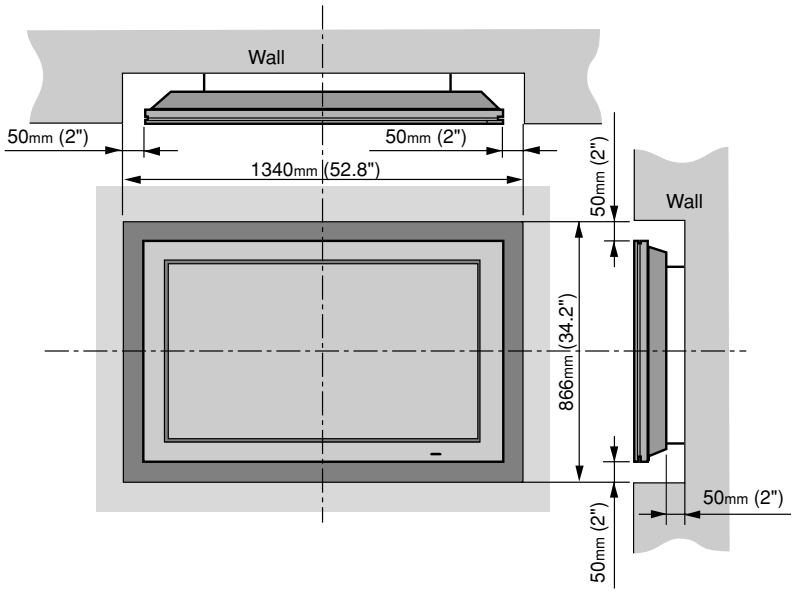
  Failure to follow correct mounting procedures could result in damage to the equipment or injury to the installer.

  Product warranty does not cover damage caused by improper installation.

*** Use only Listed Cart or Stand, or mounting kit or stand provided by manufacturer.**

Ventilation Requirements for enclosure mounting

To allow heat to disperse, leave space between surrounding objects as shown on the diagram below when installing.



Introduction

Introduction to the Plasma Monitor

Toshiba plasma monior is a seamless blend of cutting-edge visual technology and sophisticated design. At 50-inches, with a 16:9 aspect ratio, the Plasma monitor certainly makes a big impression. However, at a mere 4.2 inches/ 107 mm thin, the monitor's sleek techno-art lines blend in well with your environment. Plasma monitor crisp, vivid image quality will transform data from any graphic medium from PCs to DVD players- into art. And weighing only 98 lbs/ 44.5 kg, it actually can be hung almost anywhere. Toshiba has made sure that a host of multimedia resources can be easily connected and displayed as brilliantly as intended on the plasma monitor.

The features you'll enjoy include:

- 50-inch screen
- 16:9 aspect ratio
- Capsulated Color Filter (CCF) and black matrix
- 4.2 inch / 107 mm thin
- 98 lbs/ 44.5 kg light
- High-resolution screen: 1365 × 768 pixels
- 160-degrees of off-axis viewing, horizontally and vertically.
- Flicker - and warp - free display provides excellent image geometry even in screen corners
- Not affected by magnetic fields, no color drift or edge distortion.
- VGA, SVGA, XGA, SXGA, UXGA computer signal compatibility
- NTSC, PAL, SECAM, composite and S-Video signal compatibility
- 480P, 1080I, 720P and HDTV signal compatibility
- PCs, VCRs, Laser Disc and DVD player source compatibility
- AccuBlend™ scan conversion automatically converts VGA, SVGA, XGA, SXGA and UXGA signals to the panel's native resolution
- Advanced Mass Area Sampling Progressive Scan method is employed.
- RGB input (3*), Video input (3), DVD/HD input (2*), Audio input (3), External Control input (1)
- AccuColor control system provides user selectable on-screen color temperature settings
- New Drive Technology
- Component video input terminal for DVD, 15.75kHz (Y, C_B, C_R)
- Digital broadcasting source compatibitly
- Seven languages (English, German, French, Italian, Spanish, Swedish, and Japanese)

* You can select RGB source or Component source for the 5BNC terminal. When selecting an RGB input, the source is switched to the RGB input (3); when selecting a component input, the source is switched to the DVD/ HD input (2).

Contents of the Package

- ☐ Plasma monitor
- ☐ Power cord
- ☐ RGB cable (Mini D-Sub 15-pin to Mini D-Sub 15-pin connector)
- ☐ Remote control with two AAA Batteries
- ☐ User's manual
- ☐ Remote cable
- ☐ Safety metal fittings*
- ☐ Screws for safety metal fitting*
- ☐ Ferrite core (small × 2, large × 2), band

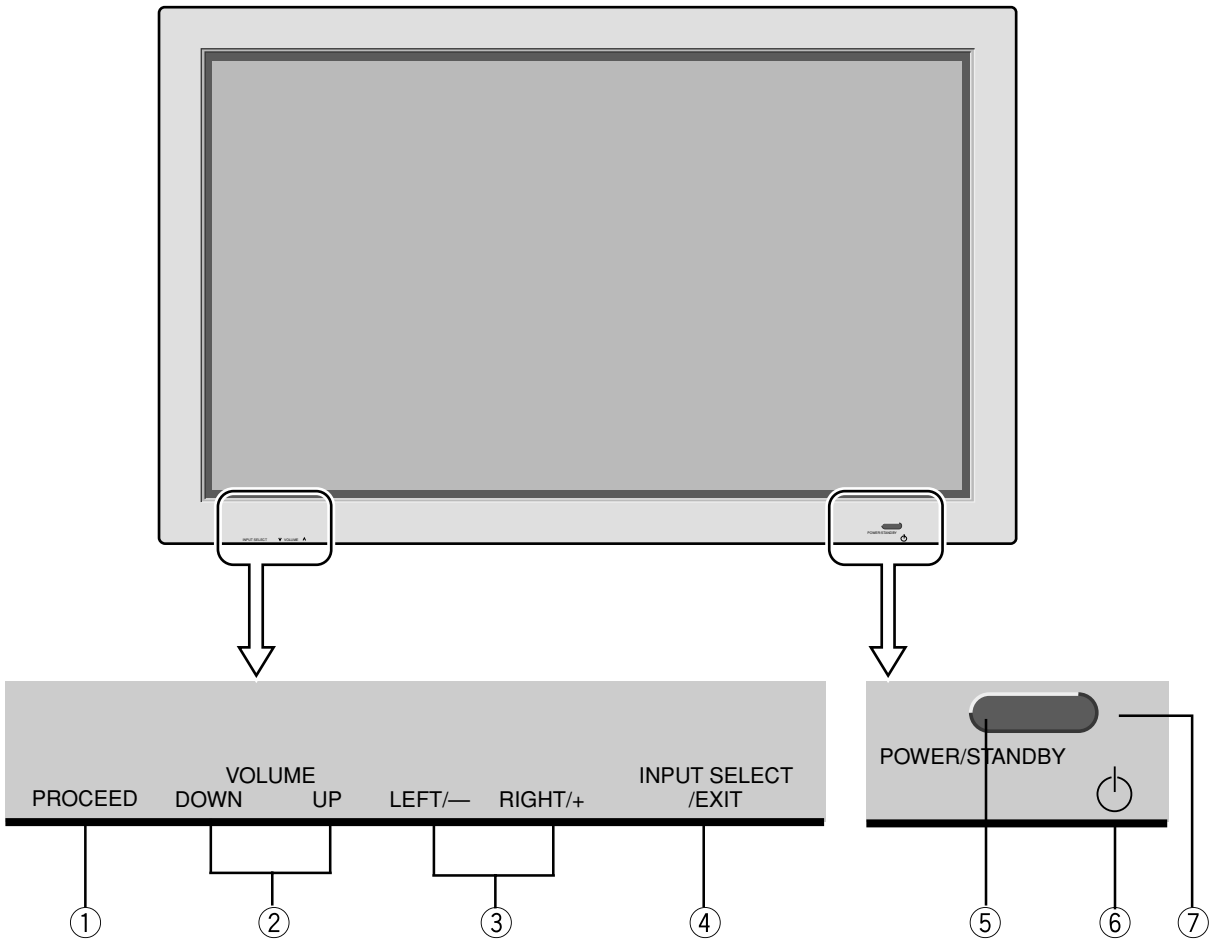
* These are fittings for fastening the unit to a wall to prevent tipping due to external shock when using the stand (option). Fasten the safety fittings to the holes in the back of the monitor using the safety fitting mount screws.

Options

- Wall mount unit
- Ceiling mount unit
- Tilt mount unit
- Tabletop stand
- Speakers
- Others

Part Names and Function

Front View



① **PROCEED**
Sets the On-Screen Menu (OSM) mode and displays the main menu.

② **VOLUME DOWN and UP**
Adjusts the volume. Functions as the CURSOR (▲/▼) buttons in the On-Screen Menu (OSM) mode.

③ **LEFT/– and RIGHT/+**
Enlarges or reduces the image. Functions as the CURSOR (◀ / ▶) buttons in the On-Screen Menu (OSM) mode.

④ **INPUT SELECT / EXIT**
Switches the input, in the following order.

→ VIDEO1 → VIDEO2 → VIDEO3→ DVD/HD→
RGB/PC3 ← RGB/PC2 ← RGB/PC1←

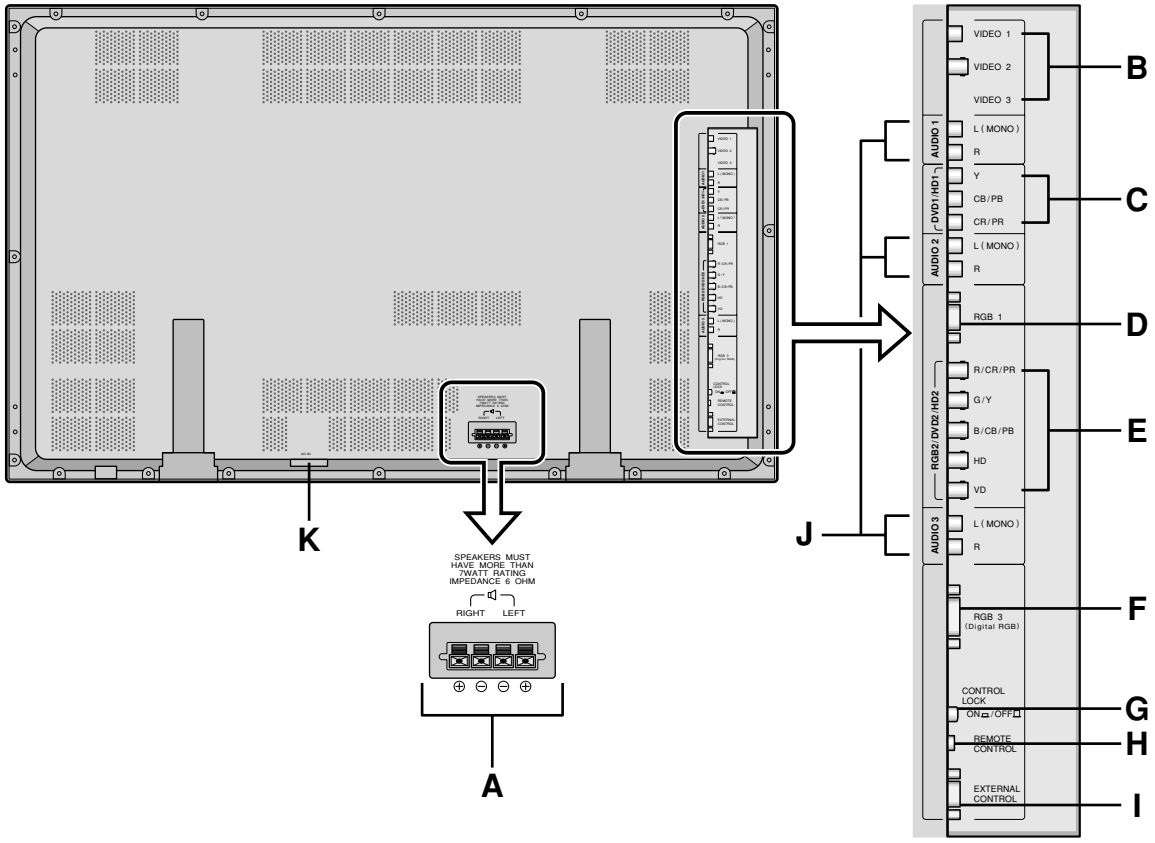
Functions as the EXIT buttons in the On-Screen Menu (OSM) mode.

⑤ **POWER/STANDBY indicator**
When the power is on ..... Lights green.
When the power is in the standby mode ... Lights red.

⑥ **Power**
Turns the monitor's power on and off.

⑦ **Remote sensor window**
Receives the signals from the remote control.

Rear View/ Terminal Board



A EXT SPEAKER L and R
Connect speakers here. Maintain the correct polarity.

B VIDEO1, 2, 3
Connect VCR's, DVD's or Laser Discs, etc. here.

C DVD1 / HD1
Connect DVD's, High Definition or Laser Discs, etc. here.

D RGB1
Inputs the analog RGB signal of personal computer, etc.

E RGB2/ DVD2/ HD2
RGB2: Inputs the analog RGB signal.
DVD2/ HD2: Connect DVD's, High Definition or Laser Discs, etc. here.

F RGB3 (DVI 29pin)
Inputs a digital RGB signal (TMDS).

G CONTROL LOCK
When "CONTROL LOCK" is set "ON", the buttons on the set's control panel do not function.

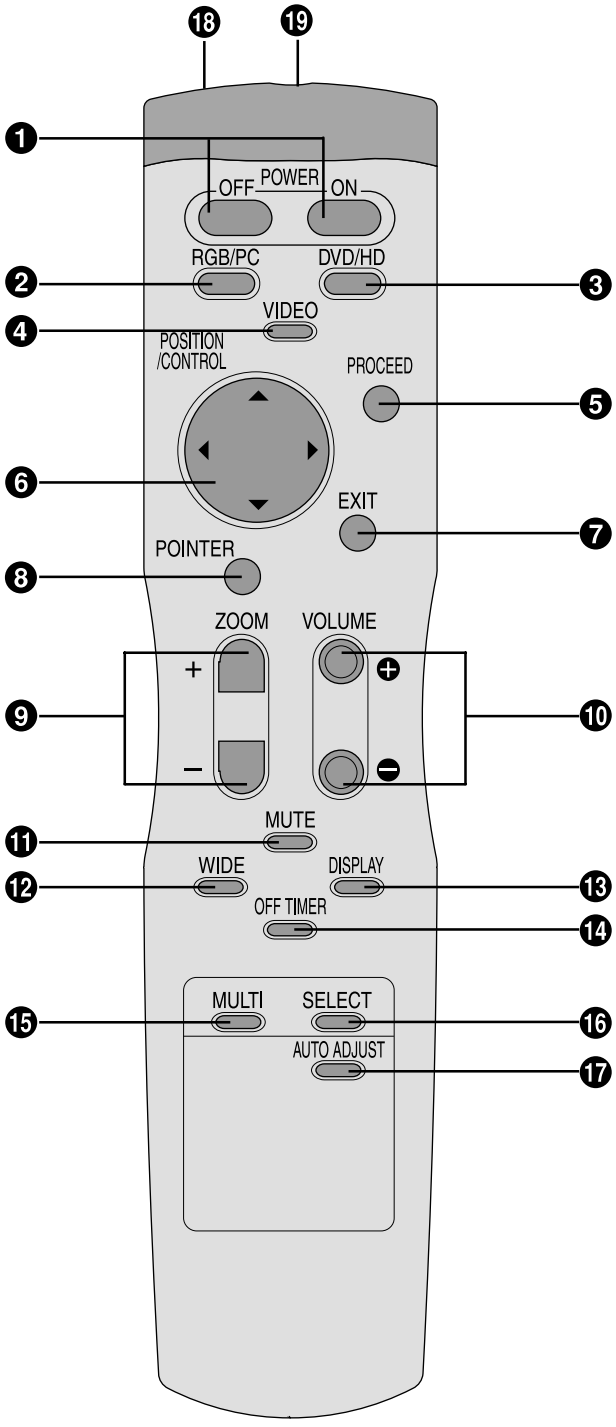
H REMOTE CONTROL
Connect the supplied remote cable here.

I EXTERNAL CONTROL
This terminal is used when power ON/OFF, input selection and AUDIO MUTE and other controls are operated externally (by external control). See also page 41 for external control.

J AUDIO1, AUDIO2, AUDIO3
These are audio input terminals.
The input is selectable. Set which video image to allot them to on the menu screen.

K AC IN
Connect the included power cord here.

Remote Control



❶ POWER ON/OFF
Switches Power ON/OFF.
(This does not operate when POWER/STANDBY indicator of the main unit is off.)

❷ RGB/PC
Press this button to select RGB/PC as the source.

→ RGB/PC1 → RGB/PC2 → RGB/PC3

RGB/PC can also be selected using the INPUT SELECT button on the monitor. The input switches as follows each time the button is pressed:

→ VIDEO1 → VIDEO2→ VIDEO3→ DVD/HD
RGB/PC3 ← RGB/PC2 ← RGB/PC1 ←

❸ DVD / HD
Press this button to select DVD/HD as the source.
DVD/HD can also be selected using the INPUT SELECT button on the monitor. The input switches as follows each time the button is pressed:

→ VIDEO1 → VIDEO2→ VIDEO3→ DVD/HD
RGB/PC3 ← RGB/PC2 ← RGB/PC1 ←

❹ VIDEO
Press this button to select VIDEO as the source.

→ VIDEO1 → VIDEO2 → VIDEO3

VIDEO can also be selected using the INPUT SELECT button on the monitor. The input switches as follows each time the button is pressed:

→ VIDEO1 → VIDEO2→ VIDEO3→ DVD/HD
RGB/PC3 ← RGB/PC2 ← RGB/PC1 ←

❺ PROCEED
Press this button to access the OSM controls.
Press this button during the display of the main menu to go to the sub menu.

❻ CURSOR (▲ / ▼ / ◀ / ▶)
Use these buttons to select items or settings and to adjust settings or switch the display patterns.

❼ EXIT
Press this button to exit the OSM controls in the main menu. Press this button during the display of the sub menu to return to the main menu.

❽ POINTER
Press this button to display the pointer.

❾ ZOOM (+ /–)
Enlarges or reduces the image.

❿ VOLUME (+ /–)
Adjusts the volume.

⓫ MUTE
Mutes the sound.

⓬ WIDE
The type of broadcast is detected automatically, and the recommended wide screen is set.

⓭ **DISPLAY**
Displays the source settings on the screen.

⓮ **OFF TIMER**
Activates the off timer for the unit.

⓯ **MULTI**
Press this button to select a screen mode from among single mode, side by side, and picture in picture.

⓰ **SELECT**
Press this button to select the active picture in a multi screen mode.

⓱ **AUTO ADJUST**
Press this button to adjust Fine Picture, Picture ADJ, Position, and Contrast automatically, or to switch the screen size to ZOOM mode automatically with the superimposed caption displayed fully only when the picture contains dark areas above and below the picture.

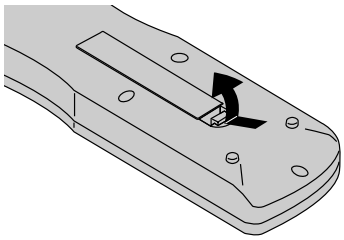
⓲ **Remote control signal transmitter**
Transmits the remote control signals.

⓳ **Remote Jack**
Insert the plug of the supplied remote cable here when using the supplied remote control in the wired condition.

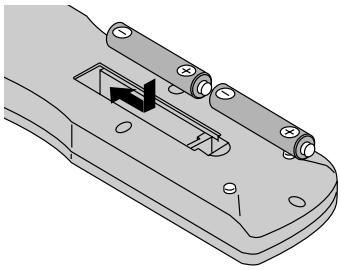
Battery Installation and Replacement

Insert the 2 “AAA” batteries, making sure to set them in with the proper polarity.

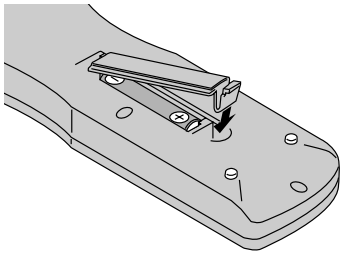
1. Press and open the cover.



2. Align the batteries according to the (+) and (–) indication inside the case.



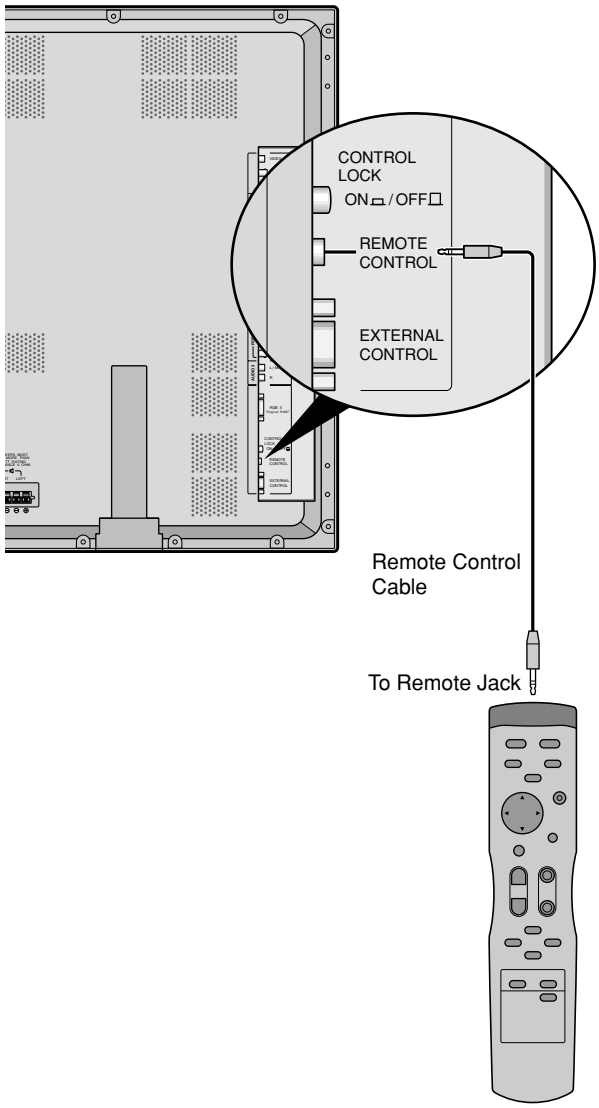
3. Replace the cover.



Using the wired remote control mode

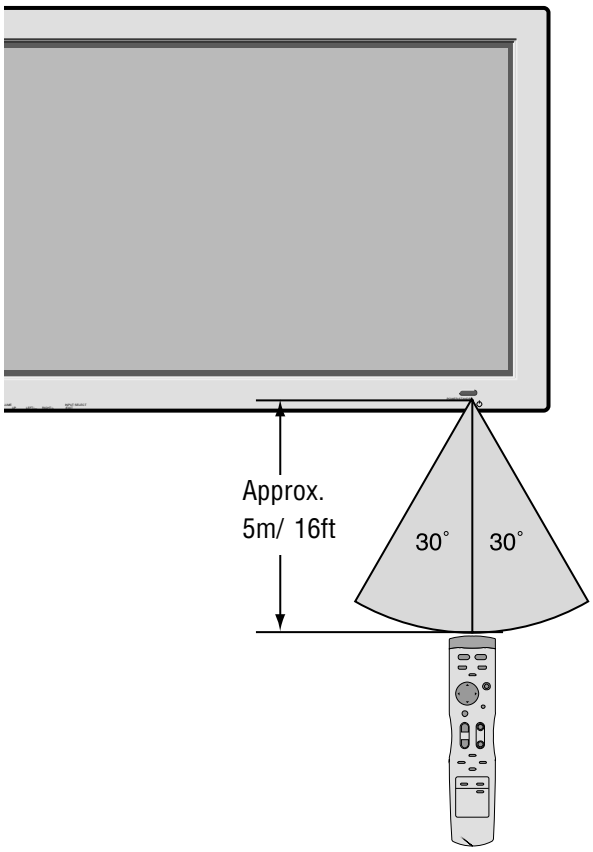
Connect the supplied remote cable to the remote control's remote jack and the "REMOTE CONTROL" terminal on the monitor.

When the cable is connected, the mode automatically switches to wired remote control. When the wired remote control mode is used, the remote control can be operated even if no batteries are loaded.



Operating Range

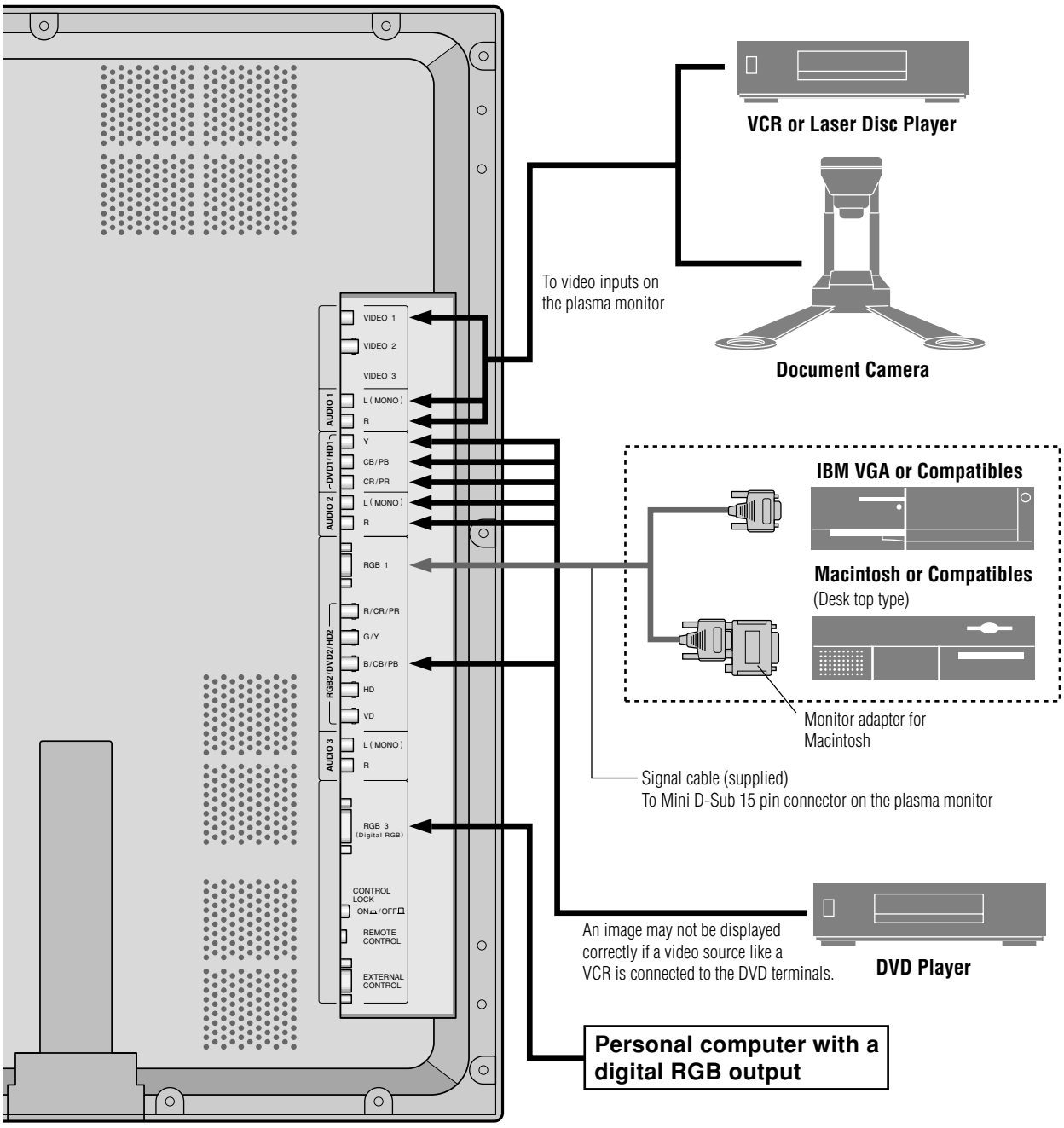
* Use the remote control within a distance of about 5 m/ 16ft. from the front of the monitor's remote control sensor and at horizontal and vertical angles of up to approximately 30°.
* The remote control operation may not function if the monitor's remote control sensor is exposed to direct sunlight or strong artificial light, or if there is an obstacle between the sensor and the remote control.



Handling the remote control

- Do not drop or mishandle the remote control.
- Do not get the remote control wet. If the remote control gets wet, wipe it dry immediately.
- Avoid heat and humidity.
- When not using the remote control for a long period, remove the batteries.
- Do not use new and old batteries together, or use different types together.
- Do not take apart the batteries, heat them, or throw them into a fire.
- When using the remote control in the wireless condition, be sure to unplug the remote cable from the REMOTE CONTROL terminal on the monitor.

Installation



Connecting Your PC or Macintosh Computer

Connecting your PC or Macintosh computer to your plasma monitor will enable you to display your computer's screen image for an impressive presentation. The plasma monitor supports the signals described on page 55.
To connect a PC, Macintosh or compatible graphics adapter, simply:

1. Turn off the power to your plasma monitor and computer.
2. If your PC does not support SXGA/XGA/SVGA/VGA you will need to install an SXGA/XGA/SVGA/VGA graphics board. Consult your computer's owner's manual for your SXGA/XGA/SVGA/VGA configuration. If you need to install a new board, see the manual that comes with your new graphics board for installation instructions.
3. The plasma monitor provides signal compatibility up to VESA 1600×1200 (UXGA). However, it is not recommended to use this resolution due to image readability on the monitors 1365×768 native pixel resolution panel.
4. Use the signal cable that's supplied to connect your PC or Macintosh computer to the plasma monitor. For Macintosh, use the monitor adapter to connect to your computer's video port.
5. Turn on the plasma monitor and the computer.
6. If the plasma monitor goes blank after a period of inactivity, it may be caused by a screen saver installed on the computer you've connected to the plasma monitor.

When using a Macintosh with the plasma monitor, the following four display standards are supported using the Macintosh adapter :

13" fixed mode
16" fixed mode
19" fixed mode
21" fixed mode

The 19" fixed mode is recommended for the plasma monitor.

Connections with Equipment that has a Digital Interface

Connections can be made with equipment that is equipped with a digital interface compliant with the DVI (Digital Visual Interface) standard.

* Use a DVI 29-pin signal cable and the ferrite cores (supplied) when making connections to the RGB3 IN (DVI) connector of the main unit.
  Note that the RGB3 IN(DVI) terminal does not support analog RGB input source.

Note:

1. Input TMDS signals conforming to DVI standards. The TMDS input corresponds to 1 link.
2. To maintain display quality, use a cable with a quality prescribed by DVI standards that is within 5 meters in length.

Connecting Your Document Camera

You can connect your plasma monitor to a document camera. To do so, simply:

1. Turn off the power to your plasma monitor and document camera.
2. Use a standard video cable to connect your document camera to the Video input on your plasma monitor.
3. Turn on the plasma monitor and the document camera.

Note: *Refer to your document camera owner's manual for more information about your camera's video output requirements.*

Connecting Your VCR or Laser Disc Player

Use common RCA cables (not provided) to connect your VCR or laser disc player to your plasma monitor. To make these connections, simply:

1. Turn off the power to your plasma monitor and VCR or laser disc player.
2. Connect one end of your RCA cable to the video output connector on the back of your VCR or laser disc player, connect the other end to the Video input on your plasma monitor. Use standard RCA audio patch cords to connect the audio from your VCR or laser disc player to your plasma monitor (if your VCR or laser disc player has this capability). Be careful to keep your right and left channel connections correct for stereo sound.
3. Turn on the plasma monitor and the VCR or laser disc player.

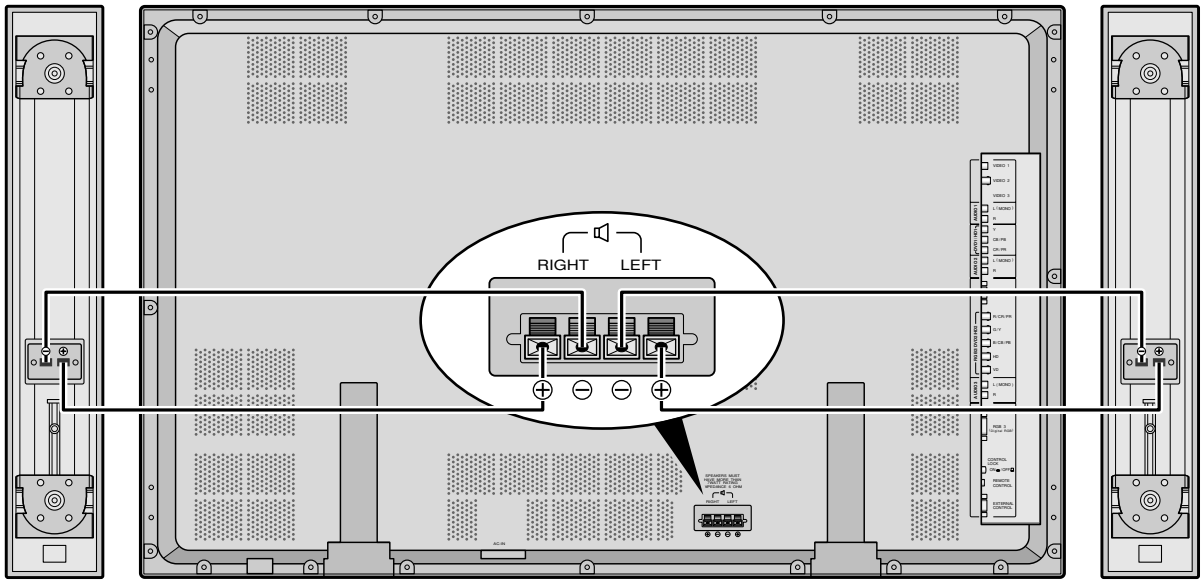
Note: *Refer to your VCR or laser disc player owner's manual for more information about your equipment's video output requirements.*

Connecting Your DVD Player

You can connect your plasma monitor to a DVD player. To do so, simply:

1. Turn off the power to your plasma monitor and DVD player.
2. Use a standard video cable to connect your DVD player to the Y, Cb, and Cr inputs on your plasma monitor. Or use the DVD-player's S-Video output. Use a standard S-Video cable to connect to the S-Video input on the plasma monitor.
3. Turn on the plasma monitor and the DVD player.

External Speaker Connections



External speakers (option) may be connected to the plasma monitor to reproduce sound from VIDEO, DVD or RGB signal sources.

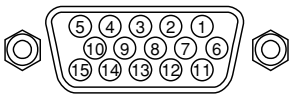
External speakers may be connected directly to the SPEAKERS terminals or indirectly by connecting a stereo system amplifier to the audio outputs.

CAUTION: *Unplug the plasma monitor and all connected components before connecting external speakers. Use only speakers with 6-ohm impedance and a power input rating of 7 watts or more.*

To connect external speakers directly to the plasma monitor:

1. Strip the ends of the speaker wires.
2. Press down the tabs below the SPEAKERS terminals, insert the speaker wire and release the tab to secure the speaker wire connection:
   - [a] Connect the right speaker (located at right side of the monitor when viewed from the front) positive (+) wire to RIGHT +.
   - [b] Connect the right speaker negative (–) wire to RIGHT –.
   - [c] Connect the left speaker negative (–) wire to LEFT–.
   - [d] Connect the left speaker positive (+) wire to LEFT+.

Pin Assignments and Signal Levels for 15 pin RGB (Analog)

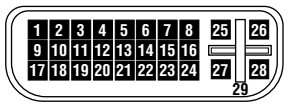


Pin No.	Signal (Analog)
1	Red
2	Green or sync-on-green
3	Blue
4	No connection
5	Ground
6	Red ground
7	Green ground
8	Blue ground
9	No connection
10	Sync signal ground
11	No connection
12	Bi-directional DATA (SDA)
13	Horizontal sync or Composite sync
14	Vertical sync
15	Data clock

Pin Configuration and Signal of the RGB 3 IN Connector (DVI Connector)

The unit is equipped with a type of connector commonly used for both analog and digital.
(Functionally, this cannot be used for an analog input.)
(TMDS can be used for one link only.)

RGB 3



Pin No.	Signal (Digital)
1	T.M.D.S Data 2 -
2	T.M.D.S Data 2 +
3	T.M.D.S Data 2 Shield
4	No connection
5	No connection
6	DDC Clock
7	DDC Data
8	No connection
9	T.M.D.S Data 1 -
10	T.M.D.S Data 1 +
11	T.M.D.S Data 1 Shield
12	No connection
13	No connection
14	+5V Power
15	Ground
16	Hot Plug Detect
17	T.M.D.S Data 0 -
18	T.M.D.S Data 0 +
19	T.M.D.S Data 0 Shield
20	No connection
21	No connection
22	T.M.D.S Clock Shield
23	T.M.D.S Clock +
24	T.M.D.S Clock -
25	No connection
26	No connection
27	No connection
28	No connection
29	No connection

Basic Operations

POWER

To turn the unit ON and OFF:

1. Plug the power cord into an active AC power outlet.
2. Press the POWER ON button (on the remote control) to turn on the unit.

   The monitor's POWER/STANDBY indicator will light up (green) when the unit is on.
3. Press the POWER OFF button (on the remote control or the unit) to turn off the unit.

   The monitor's POWER/STANDBY indicator turns red and the standby mode is set (only when turning off the unit with the remote control).

VOLUME

To adjust the volume:

1. Press and hold the VOLUME ⊕ button (on the remote control or the unit) to increase to the desired level.
2. Press and hold the VOLUME ⊖ button (on the remote control or the unit) to decrease to the desired level.

MUTE

To cancel the sound:

Press the MUTE button on the remote control to cancel the sound; press again to restore.

DISPLAY

To check the settings:

1. The screen changes each time the DISPLAY button is pressed.
2. If the button is not pressed for approximately three seconds, the menu turns off.

DIGITAL ZOOM

Digital zoom specifies the picture position and enlarges the picture.

1. Press the POINTER button to display the pointer. ( )

   To change the size of the picture:
   Press the ZOOM+ button and enlarge the picture. The pointer will change to resemble a magnifying glass. ( )
   A press of the ZOOM- button will reduce the picture and return it to its original size.

   To change the picture position:
   Select the position with the ▲▼◀▶ buttons.
2. Press the POINTER button to delete the pointer.

AUTO ADJUST

To adjust the size or quality of the picture automatically:

Press the AUTO ADJUST button.

Information

■ AUTO ADJUST ON setting

When RGB (still picture) input is selected ..... Fine Picture, Picture ADJ, Position, and Contrast will be adjusted automatically.

When RGB (motion picture), VIDEO, or Y/Pb/Pr (component) input is selected ..... The screen size switches to ZOOM mode automatically with the superimposed caption displayed fully only when the picture contains dark areas above and below the picture.

OFF TIMER

To set the off timer:

The off timer can be set to turn the power off after 30, 60, 90 or 120 minutes.

1. Press the OFF TIMER button to start the timer at 30 minutes.
2. Press the OFF TIMER button to the desired time.
3. The timer starts when the menu turns off.

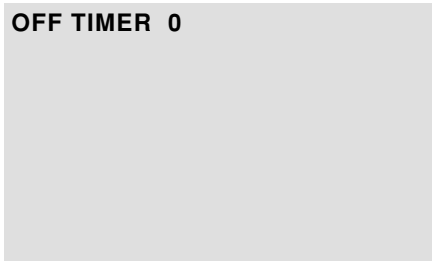
→ 30 → 60 → 90 → 120 → 0

To check the remaining time:

1. Once the off timer has been set, press the OFF TIMER button once.
2. The remaining time is displayed, then turns off after a few seconds.
3. When five minutes remain the remaining time appears until it reaches zero.

To cancel the off timer:

1. Press the OFF TIMER button twice in a row.
2. The off timer is canceled.



Note:

After the power is turned off with the off timer ...
A slight current is still supplied to the monitor. When you are leaving the room or do not plan to use the system for a long period of time, turn off the power of the monitor.

WIDE Operations

Watching with a wide screen (manual)

With this function, you can select one of four screen sizes.

When watching videos or digital video discs

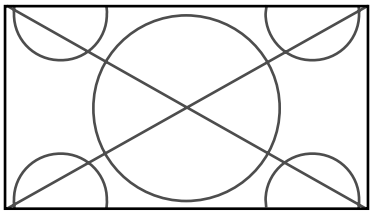
1. Press the WIDE button on the remote control.
2. *Within 3 seconds ...*

   Press the WIDE button again.

   The screen size switches as follows:

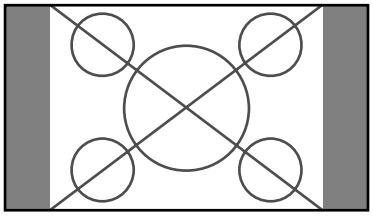
   → ZOOM → NORMAL → FULL → STADIUM →

ZOOM size screen



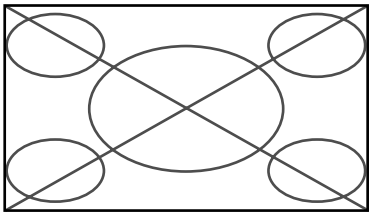
The picture is expanded in the horizontal and vertical direction, maintaining the original proportions.
* Use this for theater size (wide) movies, etc.

NORMAL size screen (4:3)



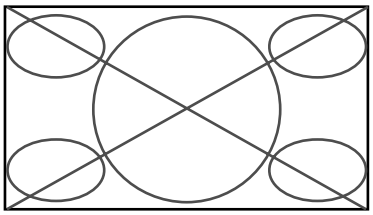
The normal size screen is displayed.
* The picture has the same size as video pictures with a 4 : 3 aspect ratio.

FULL size screen



The image is expanded in the horizontal direction.
* Images compressed in the horizontal direction ("squeezed images") are expanded in the horizontal direction and displayed on the entire screen. (Normal images are expanded in the horizontal direction.)

STADIUM size screen

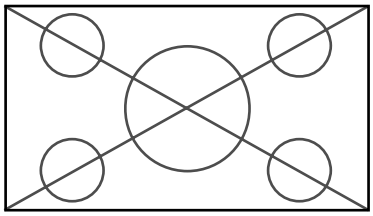


The picture is expanded in the horizontal and vertical directions at different ratios.
* Use this for watching normal video programs (4:3) with a wide screen.

When watching high definition video source

1. Press the WIDE button on the remote control.

FULL size screen (16 : 9)



The full size screen is displayed.
* The picture has the same size as video pictures (16 : 9).

Watching computer images with a wide screen

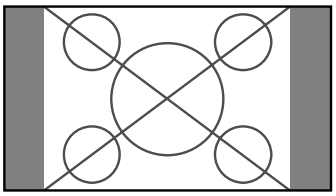
Switch to the wide screen mode to expand the 4 : 3 image to fill the entire screen.

1. Press the WIDE button on the remote control.
2. *Within 3 seconds ...*

   Press the WIDE button again.
   The screen size switches as follows:

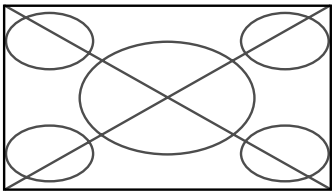
→ **NORMAL** → **FULL**

NORMAL size screen (4:3 or SXGA 5:4)



The picture has the same size as the normal computer image.

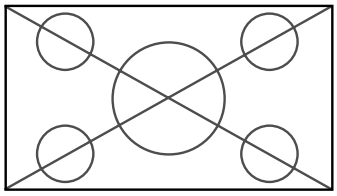
FULL size screen



The image is expanded in the horizontal direction.

When wide signals are input.

FULL size screen

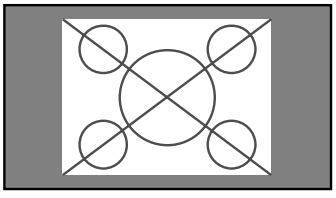


When "PICTURE SIZE" is set to "OFF"

The screen size switches as follows:

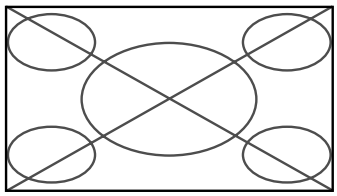
→ **TRUE** → **FULL**

TRUE size screen (VGA, SVGA 4:3)



The image is true resolution.

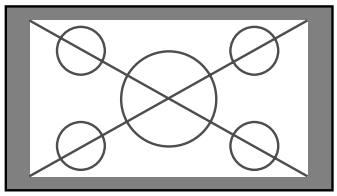
FULL size screen



The image is expanded in the horizontal and vertical direction.

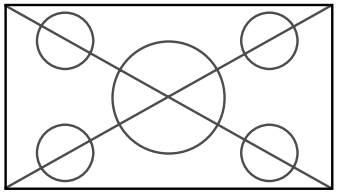
When wide signals are input.

TRUE



The image is true resolution.

FULL



Information

■ Supported resolution

See page 55 for details on the display output of the various VESA signal standards supported by the monitor.

■ "PICTURE SIZE" setting

When the setting of "PICTURE SIZE" is OFF, the size of RGB-input pictures will be TRUE in place of NORMAL.

■ When 852 (848) dot × 480 line wide VGA* signals with a vertical frequency of 60 Hz and horizontal frequency of 31.7 (31.0) kHz are input

Select an appropriate setting for RGB SELECT mode referring to the"Table of Signals Supported" on page 55.

* " IBM PC/AT" and "VGA" are registered trademarks of IBM, Inc. of the United States.

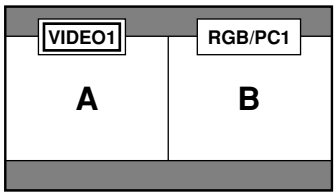
MULTI SCREEN Operations

Showing a couple of pictures on the screen at the same time

* An RGB-input picture may not be displayed in these modes, depending on the input signal specifications.

1. Press the MULTI button to select a screen mode from among single mode, side by side, and picture in picture.

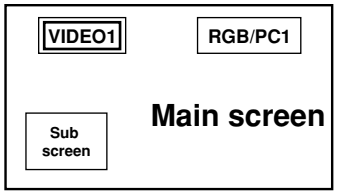
Side by side



Note:

Picture A and B on the above screen are not always of the same height.

Picture in picture



Information

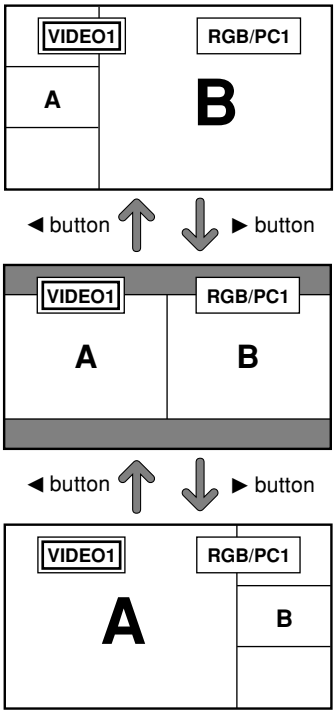
Multi screen operations may not function depending on the combination of input signals. In the table below, "◯" means Yes, "×" means No.

		Pictures displayed on the right/main screen							
		VIDEO1	VIDEO2	VIDEO3	HD/DVD1	HD/DVD2	RGB/PC1	RGB/PC2	RGB/PC3
Pictures displayed on the left/sub screen	VIDEO1	×	×	×	○	○	○	○	○
	VIDEO2	×	×	×	○	○	○	○	○
	VIDEO3	×	×	×	○	○	○	○	○
	HD/DVD1	○	○	○	×	○	○	○	○
	HD/DVD2	○	○	○	○	×	○	×	○
	RGB/PC1	○	○	○	○	○	×	×	×
	RGB/PC2	○	○	○	○	×	×	×	×
	RGB/PC3	○	○	○	○	○	×	×	×

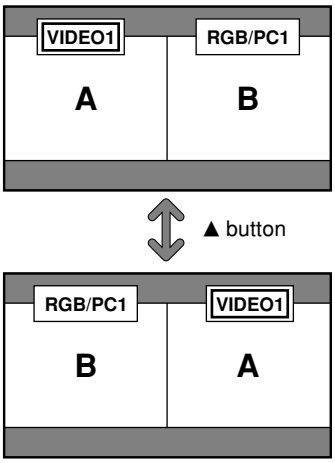
■ Multi screen operations may not function depending on the type of the RGB signals.

Operations in the Side-by-side mode

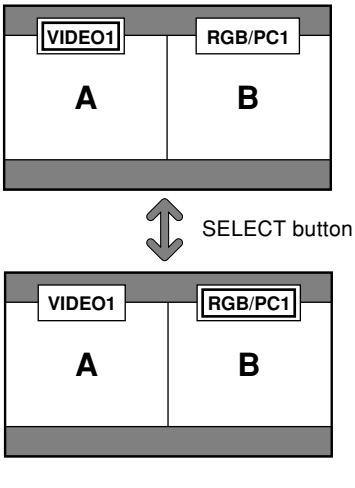
To change the picture size, press the cursor ◀ or ▶ button.



To swap the picture on the right and the left, press the cursor ▲ button.

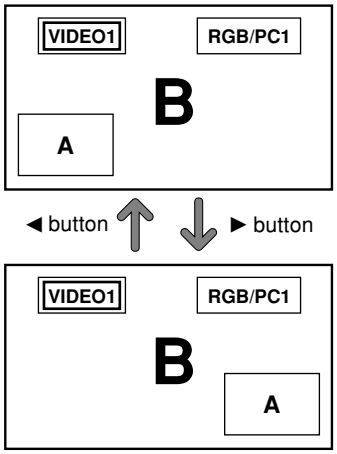


To make the desired picture active, press the SELECT button.

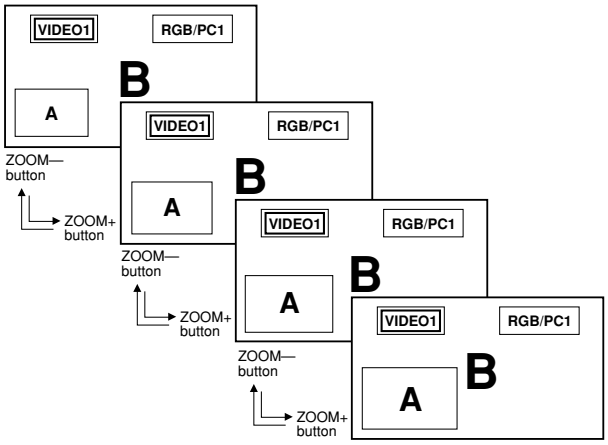


Operations in the Picture-in-picture mode

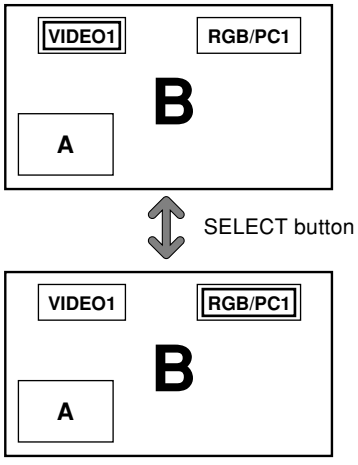
To move the position of the sub screen, press the cursor ◀ or ▶ button.



To change the size of the sub screen, press the ZOOM +/− button.



To make the desired picture active, press the SELECT button.



Selecting the input signals to be displayed

1. Press the SELECT button to make the desired picture active.
2. Press the RGB/PC, VIDEO, or DVD/HD button.
   Each press of the button changes the selection of the input signal.
   The INPUT SELECT button on the monitor can also be used to change the selection.

Adjusting the OSM controls

1. Press the SELECT button to make the desired picture active.
2. Press the PROCEED button to display the MAIN MENU.
3. Adjust the setting to your preference.
   For details, see "OSM (On Screen Menu) Controls" on page 18.

Note:

- *During Multi screen mode, Auto Adjust does not affect the screen.*
- *During Multi screen mode, some functions of OSM controls are not available.*

OSM(On Screen Menu) Controls

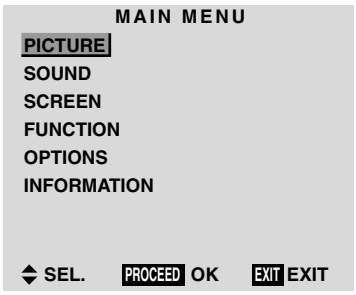
Menu Operations

The OSM window is displayed with respect to the screen as shown on the diagram.

* Depending on the screen's mode, the OSM may be displayed differently.
  In the explanation, the OSM section is shown close up.

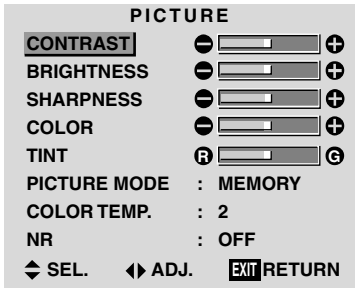
The following describes how to use the menus and the selected items.

1. Press the PROCEED button on the remote control to display the MAIN MENU.



2. Press the cursor buttons ▲ ▼ on the remote control to highlight the menu you wish to enter.

3. Press the PROCEED button on the remote control to select a submenu or item.



4. Adjust the level or change the setting of the selected item by using the cursor buttons ◀ ▶ on the remote control.

5. The change is stored until you adjust it again.

6. Repeat steps 2 – 5 to adjust an additional item, or press the EXIT button on the remote control to return to the main menu.

Note: *The main menu disappears by pressing the EXIT button.*

Main menu	Sub menu	Functions	Default	Reset
PICTURE	CONTRAST	Adjusts the contrast.	Center	Yes
	BRIGHTNESS	Adjusts the brightness.	Center	Yes
	SHARPNESS	Adjusts the sharpness.	Center/1	Yes
	COLOR	Adjusts the color.	Center	Yes
	TINT	Adjusts the tint.	Center	Yes
	PICTURE MODE	Sets the picture mode according to the VIDEO environment and image software.	MEMORY	Yes
	COLOR TEMP	Adjusts the color temperature and white balance.	2	Yes
	NR	Reduces noise visible in image.	OFF	Yes

Main menu	Sub menu	Functions	Default	Reset
SOUND	BASS	Sets the bass.	Center	Yes
	TREBLE	Sets the treble.	Center	Yes
	BALANCE	Sets the left/right balance.	Center	Yes

Main menu	Sub menu	Functions	Default	Reset
SCREEN	V-POSITION	Adjusts the vertical position.	Center	Yes
	H-POSITION	Adjusts the horizontal position.	Center	Yes
	V-HEIGHT	Adjusts the vertical size.	Min	Yes
	H-WIDTH	Adjusts the horizontal size.	Min	Yes
	AUTO PICTURE	Turn this on to have the monitor automatically adjust “FINE PICTURE” and “PICTURE ADJ”.	OFF*1	No
	FINE PICTURE	Adjusts for flickering on the computer image.	Min*1	Yes
	PICTURE ADJ.	Adjusts for striped patterns on the computer image.	Center*1	Yes

Main menu	Sub menu	Functions	Default	Reset
FUNCTION	OSM	Turns the on-screen menu (screen mode, etc.) off (when set to “OFF”). When set to “ON”, the on-screen menu is displayed.	ON	Yes
	OSM ADJ.	Adjusts the vertical and horizontal positions of the menu display.	1	Yes
	POWER MGT	Sets the monitor for use as an energy-saving display when used with a computer.	OFF	Yes
	GRAY LEVEL	In case of 4 : 3, sets the luminance of both sides.	3	Yes
	CINEMA MODE	Sets the picture to suit the movie.	ON	Yes
	RGB3 ADJ.	Adjusts the picture when the picture input from the RGB3 input terminal is distorted.	1	Yes
	LONG LIFE	Sets the picture to reduce burn-in of the display.	*2	Yes
	RESET	Resets all the settings (PICTURE, SOUND, SCREEN, FUNCTION, etc.) to the factory default values.	—	—

Main menu	Sub menu	Functions	Default	Reset
OPTIONS	AUDIO INPUT	Sets the allocation of the audio connectors.	*3	Yes
	BNC SELECT	Sets the BNC connectors.	RGB	Yes
	RGB SELECT	Sets the appropriate mode for the computer image. RGB (VGA signals), VIDEO (Moving picture), WIDE (WIDE VGA) DTV.	AUTO	Yes
	HD SELECT	Sets the digital broadcasting (1080A,1080B) or the High Vision (1035I).	1080B	No
	PICTURE SIZE	Sets the picture size for RGB input.	ON	Yes

Main menu	Sub menu	Functions	Default	Reset
INFORMATION	FREQUENCY	Used to check the frequency and synchronizing polarities of the signal currently being inputted.	—	—
	LANGUAGE	Sets the language of the menus (Japanese, English, German, French, Swedish, Italian or Spanish).	English	No
	COLOR SYSTEM	Sets the VIDEO format (AUTO1, AUTO2, PAL, PAL-M, PAL-N, PAL60, SECAM, 4.43 NTSC or 3.58 NTSC).	AUTO1	No

*1 RGB/PC only.
*2 PLE: AUTO ORBITER: OFF INVERSE: OFF SCREEN WIPER: OFF
*3 AUDIO1: VIDEO1 AUDIO2: HD/DVD1 AUDIO3: RGB1

Picture Settings Menu

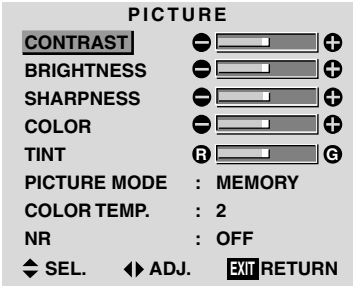
Adjusting the picture

The contrast, brightness, sharpness, color and tint can be adjusted as desired.

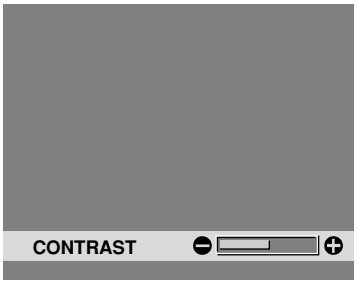
Example: Adjusting the contrast

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select "PICTURE", then press the PROCEED button. The "PICTURE" screen appears.
2. Use the ▲ and ▼ buttons to select "CONTRAST".



3. Use the ◀ and ▶ buttons to adjust the contrast.



* If neither the ◀ or ▶ button is pressed within 5 seconds, the current setting is set and the previous screen reappears.

4. *Once the adjustment is completed ...*

   Press the EXIT button to return to the main menu.

   To delete the main menu, press the EXIT button once more.

Note: *If "CAN NOT ADJUST" appears ...*
When trying to enter the PICTURE submenu, make sure PICTURE MODE is set to MEMORY.

Information

■ Picture adjustment screen

CONTRAST .... Changes the picture's contrast.
BRIGHTNESS . Changes the picture's brightness.
SHARPNESS .. Changes the picture's sharpness. Adjusts picture detail of VIDEO display.
COLOR ..... Changes the color density.
TINT ..... Changes the picture's tint. Adjust for natural colored skin, background, etc.

■ Adjusting the computer image

Only the contrast and brightness can be adjusted when a computer signal is connected.

■ Restoring the factory default settings

Select "RESET" under the "PICTURE MODE" settings.

Setting the picture mode according to the brightness of the room

There are four picture modes that can be used effectively according to the environment in which you are viewing the display.

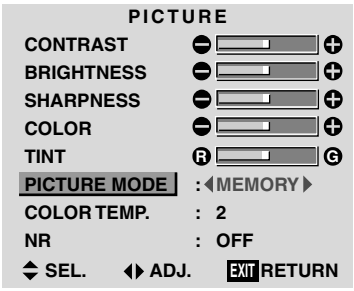
Example: Setting the “THEATER” mode

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “PICTURE”, then press the PROCEED button.

   The “PICTURE” screen appears.

2. Use the ▲ and ▼ buttons to select “PICTURE MODE”.

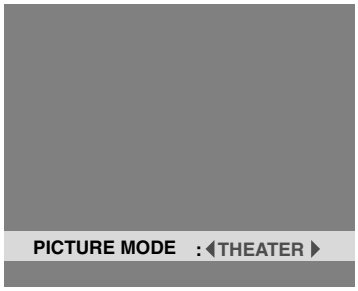


3. *To set to “THEATER” ...*

   Use the ◀ and ▶ buttons to select “THEATER”.

   The mode switches as follows when the ◀ and ▶ buttons are pressed:

   → **MEMORY ↔ THEATER ↔ NORMAL ↔ RESET** ←



* If neither the ◀ or ▶ button is pressed within 5 seconds, the current selection is set and the previous screen reappears.

4. *Once the adjustment is completed ...*

   Press the EXIT button to return to the main menu. To delete the main menu, press the EXIT button once more.

Information

■ Types of picture modes

MEMORY ..... The last picture adjustments are stored here.

THEATER ..... Set this mode when watching video in a dark room.
This mode provides darker, finer pictures, like the screen in movie theaters.
CONTRAST = 80% for RESET mode
BRIGHTNESS = 95% for RESET mode

NORMAL ..... Set this mode when watching video in a bright room.
This mode provides dynamic pictures with distinct differences between light and dark sections.
CONTRAST = 96% for RESET mode

RESET ..... Use this to reset the picture to the factory default settings.

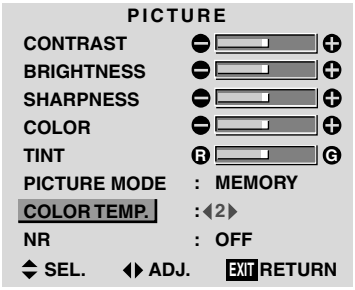
Setting the color temperature

Use this procedure to set color tone produced by the plasma display.

Example: Setting “1”

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “PICTURE”, then press the PROCEED button.
   The “PICTURE” screen appears.
2. Use the ▲ and ▼ buttons to select “COLOR TEMP.”.

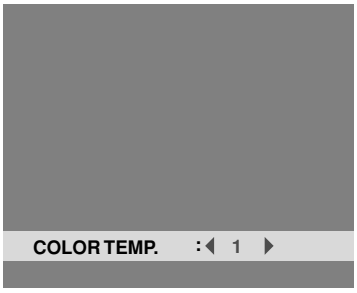


3. Use the ◀ and ▶ buttons to select “1”.

   The mode switches as follows when the ◀ and ▶ buttons are pressed:

   → 2 ↔ 3 ↔ PRO ↔ 1 ←

* See page 23 to set “PRO”.



* If neither the ◀ or ▶ button is pressed within 5 seconds, the current selection is set and the previous screen reappears.

4. *Once the setting is completed...*

   Press the EXIT button to return to the main menu.

   To delete the main menu, press the EXIT button once more.

Information

■ Setting the color temperature

1 ..... High (bluer)
2 ..... Middle (Standard)
3 ..... Low (redder)

■ Restoring the factory default settings

Select “RESET” under the function menu. Note that this also restores other settings to the factory defaults.

Adjusting the color to the desired quality

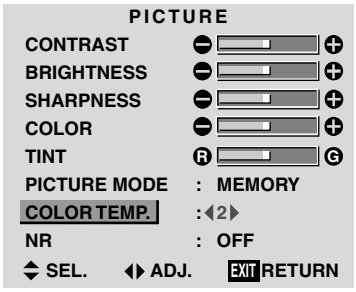
Use this procedure to adjust the white balance for bright pictures and dark pictures to achieve the desired color quality.

Example: Adjusting the “WHITE BALANCE”

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “PICTURE”, then press the PROCEED button.
   The “PICTURE” screen appears.

2. Use the ▲ and ▼ buttons to select “COLOR TEMP.”.



3. Use the ◀ and ▶ buttons to select “PRO”.

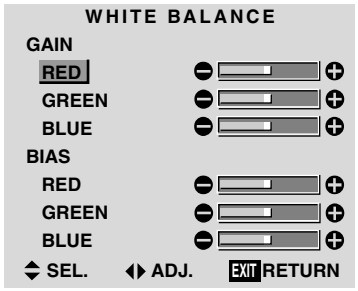
   The mode switches as follows when the ◀ and ▶ buttons are pressed:

   → 2 ↔ 3 ↔ PRO ↔ 1 ↩

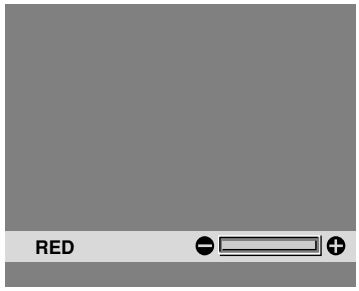
* If neither the ◀ or ▶ button is pressed within 5 seconds, the current selection is set and the previous screen reappears.

4. Press the PROCEED button.
   The “WHITE BALANCE” screen appears.

5. Use the ▲ and ▼ buttons to select “RED-GAIN”.



6. Adjust the white balance using the ◀ and ▶ buttons.



* If neither the ◀ or ▶ button is pressed within 5 seconds, the current setting is set and the previous screen reappears.

7. *Once the adjustment is completed...*
   Press the EXIT button several times to return to the main menu. To delete the main menu, press the EXIT button once more.

Information

■ Adjusting the white balance

RGB-GAIN ..... White balance adjustment for signal level

RGB-BIAS ..... White balance adjustment for black level

■ Restoring the factory default settings

Select “RESET” under the function menu. Note that this also restores other settings to the factory defaults.

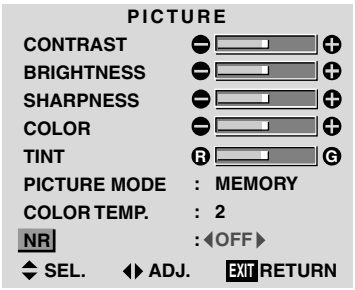
Reducing noise in the picture

Use these settings if the picture has noise due to poor reception or when playing video tapes on which the picture quality is poor.

Example: Setting “NR-3”

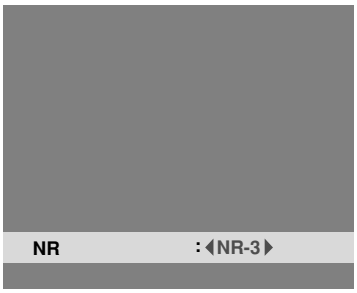
Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “PICTURE”, then press the PROCEED button.
   The “PICTURE” screen appears.
2. Use the ▲ and ▼ buttons to select “NR”.



3. Use the ◀ and ▶ buttons to select “NR-3”.
   The mode switches as follows when the ◀ and ▶ buttons are pressed:

→ OFF ↔ NR-1 ↔ NR-2 ↔ NR-3 ←



* If neither the ◀ or ▶ button is pressed within 5 seconds, the current selection is set and the previous screen reappears.

4. *Once the setting is completed ...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ NR

* “NR” stands for Noise Reduction.
* This function reduces noise in the picture.

■ Types of noise reduction

There are three types of noise reduction. Each has a different level of noise reduction.
The effect becomes stronger as the number increases (in the order NR-1 → NR-2 → NR-3).
OFF ..... Turns the noise reduction function off.

Sound Settings Menu

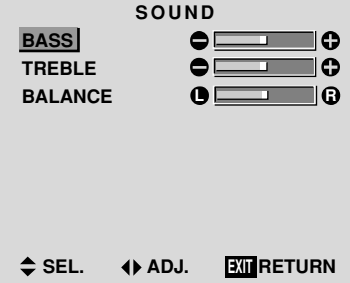
Adjusting the treble, bass and left/right balance

The treble, bass and left/right balance can be adjusted to suit your tastes.

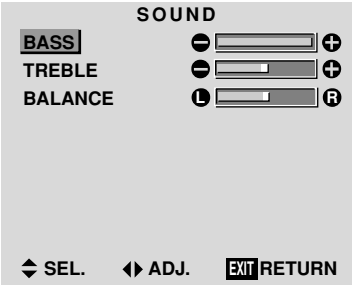
Example: Adjusting the bass

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select "SOUND", then press the PROCEED button.
   The "SOUND" screen appears.
2. *To adjust the bass ...*
   Use the ▲ and ▼ buttons to select "BASS".



3. Adjust the bass using the ◀ and ▶ buttons.



* If neither the ◀ or ▶ button is pressed within 5 seconds, the current selection is set and the previous screen reappears.

To continue adjusting the sound ...
Repeat from step 2.

4. *Once the adjustment is completed ...*
   Press the EXIT button to return to the main menu. To delete the main menu, press the EXIT button once more.

Note : *If "CAN NOT ADJUST" appears...*
Set "AUDIO INPUT" on the OPTION menu correctly.

Information

■ Sound settings menu

BASS ..... Changes the level of low frequency sound.
TREBLE ..... Changes the level of high frequency sound.
BALANCE ..... Changes the balance of the left and right channels.

■ Restoring the factory default settings

Select "RESET" under the function menu. Note that this also restores other settings to the factory defaults.

Screen Settings Menu

Adjusting the Position, Size, Fine Picture, Picture Adj

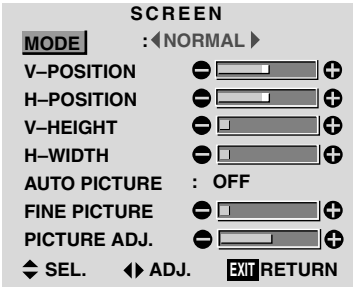
The position of the image can be adjusted and flickering of the image can be corrected.

Example: Adjusting the vertical position in the normal mode

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select "SCREEN", then press the PROCEED button. The "SCREEN" menu appears.

   Default settings (when RGB/PC is selected)



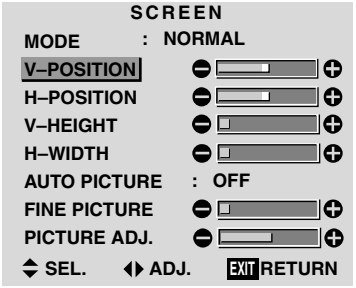
   * The settings on the SCREEN menu are not preset at the factory.

   To select a mode ...
   Use the ◀ and ▶ buttons to select a mode.
   The mode switches as follows when the ◀ and ▶ buttons are pressed:

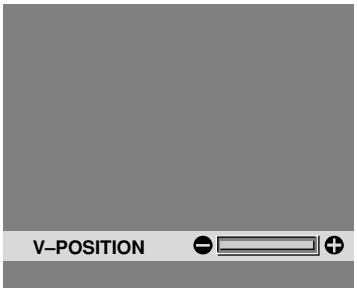
   → NORMAL ↔ FULL ←

   * The mode can also be switched by pressing the "WIDE" button on the remote control.

2. *To adjust the vertical position ...*
   Use the ▲ and ▼ buttons to select "V-POSITION".



3. Adjust using the ◀ and ▶ buttons.



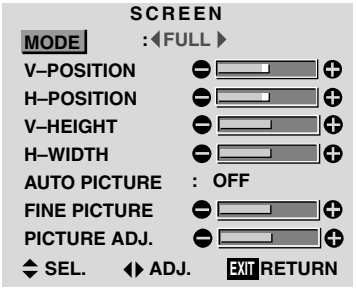
   * If neither the ◀ or ▶ button is pressed within 5 seconds, the current setting is set and the previous screen reappears.

   To continue making other computer image adjustments ...
   Repeat from step 2.

4. *Once all adjustments are completed ...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ When "AUTO PICTURE" is "OFF"



When Auto Picture is off, the Fine Picture and the Picture ADJ. items are displayed so that you can adjust them.

Information

■ Adjusting the Auto Picture

ON ..... The Picture ADJ and Fine Picture adjustments are made automatically.
OFF ..... The Picture ADJ and Fine Picture adjustments are made manually.

■ Adjusting the position of the image

V-POSITION ... Adjusts the vertical position of the image.
H-POSITION ... Adjusts the horizontal position of the image.
V-HEIGHT ..... Adjusts the vertical size of the image. (Except for STADIUM mode)
H-WIDTH ..... Adjusts the horizontal size of the image. (Except for STADIUM mode)
FINE PICTURE* .. Adjusts for flickering.
PICTURE ADJ* .... Adjusts for striped patterns on the image.

* The Picture ADJ and Fine Picture features are available only when the "Auto Picture" is off.
* The AUTO PICTURE, FINE PICTURE and PICTURE ADJ. are available only for RGB signals.

■ Restoring the factory default settings

Select "RESET" under the function menu. Note that this also restores other settings to the factory defaults except for Auto Picture.

Function Settings Menu

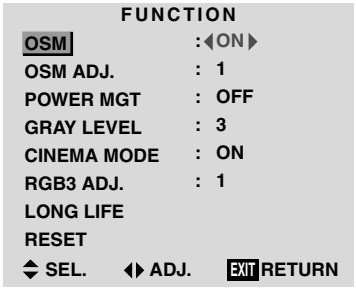
Setting the on-screen menu

When using the monitor for presentations, etc., the monitor can be set so that the input source, screen mode, etc., do not appear.

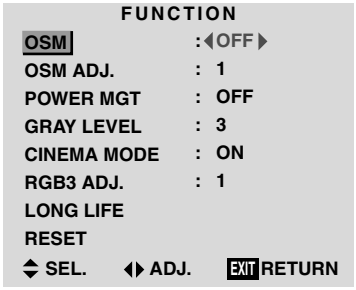
Example: Turning the on-screen menu mode off

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select "FUNCTION", then press the PROCEED button.
   The "FUNCTION" screen appears.
2. Use the ▲ and ▼ buttons to select "OSM".



3. *To turn the on-screen menu mode off ...*
   Use the ◀ and ▶ buttons to select "OFF".
   The mode switches as follows each time the ◀ or ▶ button is pressed:
   ON ↔ OFF



4. *Once the setting is completed ...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ OSM modes

ON ..... The on-screen menu appears.
OFF ..... The on-screen menu does not appear.

■ Restoring the factory default settings

Select "RESET" under the function menu. Note that this also restores other settings to the factory defaults.

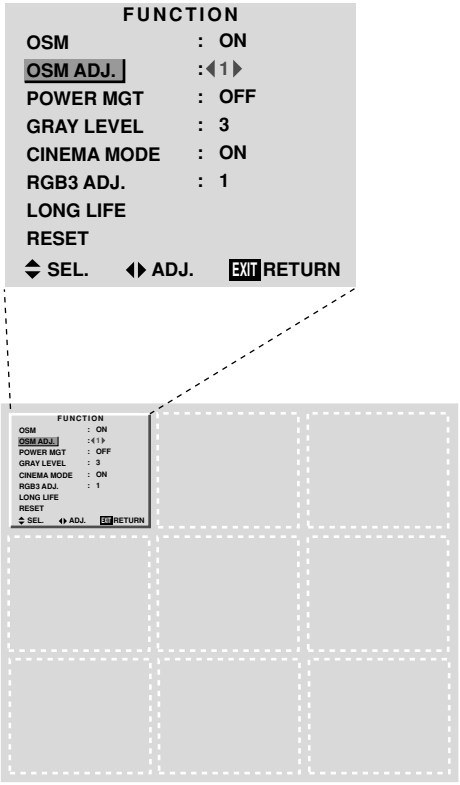
Adjusting the position of the menu display

Use these operations to adjust the position of the menus that appear on the screen.

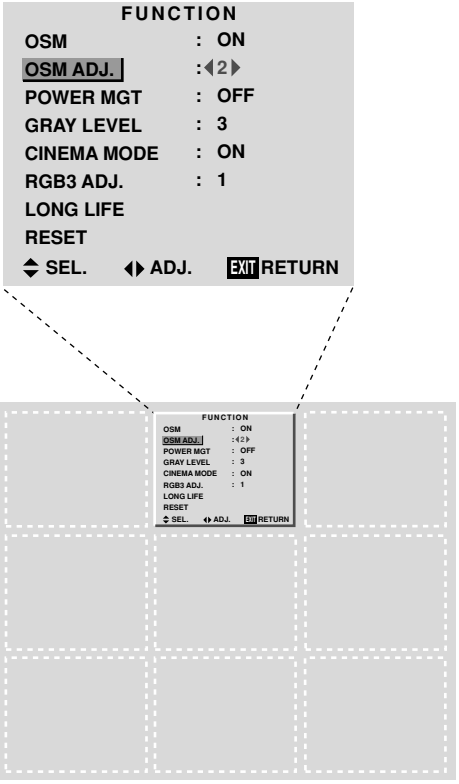
Example: Adjusting the position of the menu display

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “FUNCTION”, then press the PROCEED button.
   The “FUNCTION” menu appears.
2. Use the ▲ and ▼ buttons to select “OSM ADJ.”



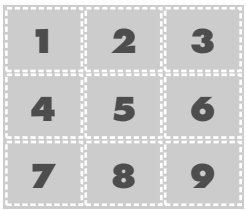
3. *To adjust the position...*
   Adjust using the ◀ and ▶ buttons.



4. *Once all adjustments are completed ...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ Adjusting the position of the menu display



The position can be set between 1 and 9.

■ Restoring the factory default settings

Select “RESET” under the function menu. Note that this also restores other settings to the factory defaults.

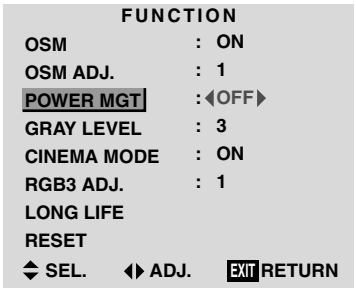
Setting the power management for computer images

This energy-saving (power management) function automatically reduces the monitor's power consumption if no operation is performed for a certain amount of time.

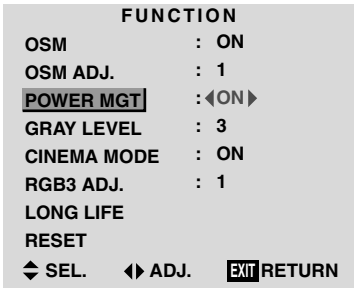
Example: Turning the power management function on

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select "FUNCTION", then press the PROCEED button.
   The "FUNCTION" screen appears.
2. Use the ▲ and ▼ buttons to select "POWER MGT".



3. *To turn the power management function on ...*
   Use the ◀ and ▶ buttons to select "ON".
   The mode switches as follows each time the ◀ or ▶ button is pressed:
   ON ↔ OFF



4. *Once the setting is completed ...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ Power management function

* The power management function automatically reduces the monitor's power consumption if the computer's keyboard or mouse is not operated for a certain amount of time. This function can be used when using the monitor with a computer conforming to the VESA DPMS format.
* If the computer's power is not turned on or if the computer and selector tuner are not properly connected, the system is set to the off state.
* For instructions on using the computer's power management function, refer to the computer's operating instructions.

■ Power management settings

ON ..... In this mode the power management function is turned on.
OFF ..... In this mode the power management function is turned off.

■ Power management function and POWER/STANDBY indicator

The POWER/STANDBY indicator indicates the status of the power management function. See page 30 for indicator status and description.

■ Restoring the factory default settings

Select "RESET" under the function menu. Note that this also restores other settings to the factory defaults.

POWER/STANDBY indicator

Power management mode	POWER/STANDBY indicator	Power management operating status	Description	Turning the picture back on
On	Green	Not activated.	Horizontal and vertical synchronizing signals are present from the computer.	Picture already on.
Standby	Orange	Activated.	No horizontal synchronizing signals are sent from the computer.	Operate the keyboard or mouse. The picture reappears immediately.
Suspend	Red	Activated.	No vertical synchronizing signals are sent from the computer.	Operate the keyboard or mouse. The picture reappears, but more time is required than from the standby mode.
Off	Red	Activated.	No horizontal and vertical synchronizing signals are sent from the computer.	Operate the keyboard or mouse. The picture reappears, but more time is required than from the standby mode or suspend mode.

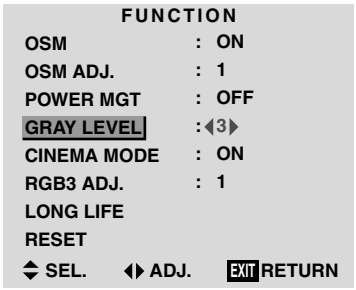
Setting the gray level for the sides of the screen

Use this procedure to set the gray level for the parts on the screen on which nothing is displayed when the screen is set to the 4:3 size.

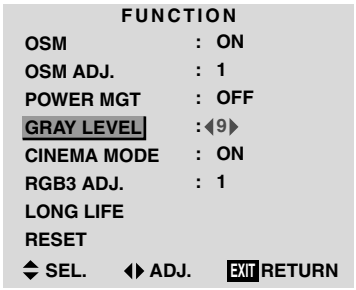
Example: Adjusting the “GRAY LEVEL”

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “FUNCTION”, then press the PROCEED button.
   The “FUNCTION” screen appears.
2. Use the ▲ and ▼ buttons to select “GRAY LEVEL”.



3. *To adjust the “GRAY LEVEL”...*
   Use the ◀ and ▶ buttons to adjust the GRAY LEVEL.



4. *Once the setting is completed ...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ GRAY LEVEL

This adjusts the brightness of the black (the gray level) for the sides of the screen.
The standard is 0 (black). The level can be adjusted from 0 to 15. The factory setting is 3 (dark gray).

■ Restoring the factory default settings

Select “RESET” under the function menu. Note that this also restores other settings to the factory defaults.

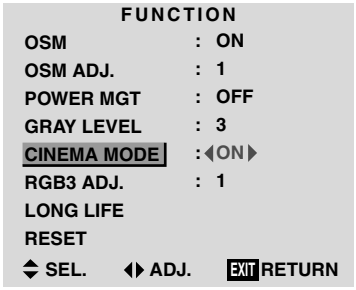
Setting the picture to suit the movie

The film image is automatically discriminated and projected in an image mode suited to the picture.
[NTSC, PAL, PAL60, 480I (60Hz), 525I (60Hz), 576I (50Hz), 625I (50Hz), 1035I (60Hz), 1080I (60Hz) only]

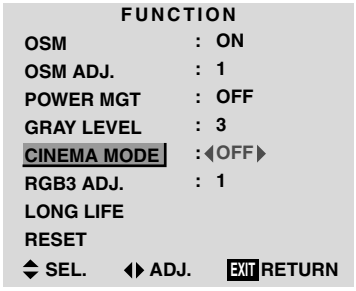
Example: Setting the “CINEMA MODE” to “OFF”

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “FUNCTION”, then press the PROCEED button.
   The “FUNCTION” screen appears.
2. Use the ▲ and ▼ buttons to select “CINEMA MODE”.



3. *To set the CINEMA MODE to “OFF” ...*
   Use the ◀ and ▶ buttons to select “OFF”.
   The mode switches as follows each time the ◀ or ▶ button is pressed:



4. *Once the setting is completed ...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ CINEMA MODE

ON ..... Automatic discrimination of the image and projection in cinema mode.
OFF ..... Cinema mode does not function.

■ Restoring the factory default settings

Select “RESET” under the function menu. Note that this also restores other settings to the factory defaults.

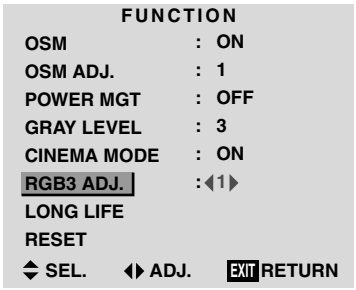
Setting RGB3 ADJ.

When the picture input from the RGB3 input terminal is distorted, select the most appropriate setting from among "1", "2", and "3".

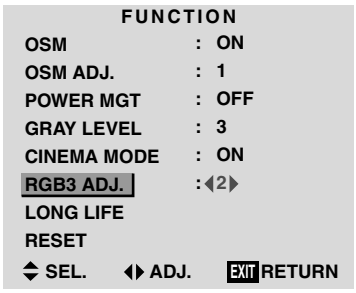
Example: Setting "2"

Press the PROCEED button on the remote control to display MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select "FUNCTION", then press the PROCEED button.
   The "FUNCTION" screen appears.
2. Use the ▲ and ▼ buttons to select "RGB3 ADJ.".



3. *To select "2"...*
   Use the ◀ and ▶ buttons to select "2".
   The mode switches as follows each time the ◀ or ▶ buton is pressed:
   1 ↔ 2 ↔ 3



4. *Once the setting is completed...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ When you adjust the RGB3 ADJ.

The position of the menu display will change. In such a case, be sure to adjust the position.

■ Restoring the factory default settings

Select "RESET" under the function menu. Note that this also restores other settings to the factory defaults.

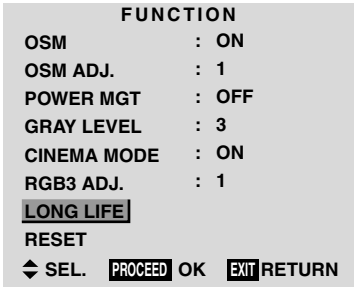
Reducing burn-in of the screen

The brightness of the screen, the position of the picture, positive/negative mode and screen wiper are adjusted to reduce burn-in of the screen.

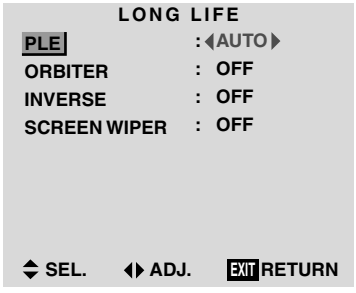
Example: Setting "PLE" to "LOCK"

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then proceed as follows.

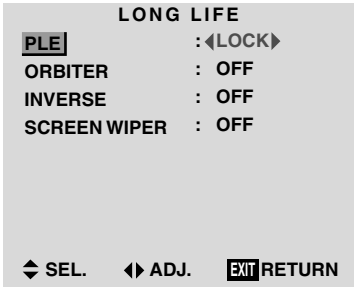
1. Use the ▲ and ▼ buttons to select "FUNCTION", then press the PROCEED button.
   The "FUNCTION" screen appears.
2. Use the ▲ and ▼ buttons to select "LONG LIFE", then press the PROCEED button.



   The "LONG LIFE" screen appears.
3. Use the ▲ and ▼ buttons to select "PLE".



4. Use the ◀ and ▶ buttons to select "LOCK".
   The mode switches as follows each time the ◀ or ▶ button is pressed:
   AUTO ↔ LOCK



5. *Once the setting is completed...*
   Press the EXIT button to return to the FUNCTION menu.
   To exit the main menu, press the EXIT button twice.

Information

■ PLE

AUTO ..... The brightness of the screen is adjusted automatically to suit the picture quality.
LOCK ..... The brightness level is set to minimum.

■ ORBITER

OFF ..... Orbiter mode does not function.
ON ..... The picture moves around the screen intermittently.

■ INVERSE

OFF ..... Inverse mode does not function.
ON ..... The picture is displayed alternately between positive image and negative image.
You can set the time by pressing the PROCEED button while "ON" is set.
WT ..... The entire screen turns white.
You can set the time by pressing the PROCEED button while "ON" is set.

■ SCREEN WIPER

OFF ..... Screen wiper mode does not function.
ON ..... Repeatedly moves the white vertical bar from the left end of the screen to the right end at a constant speed.
You can set the time by pressing the PROCEED button while "ON" is set.

■ Restoring the factory default settings

Select "RESET" from the function menu. Note that this also restores other settings to the factory defaults.

* Only the PLE and ORBITER can be adjusted when a RGB signal is connected.

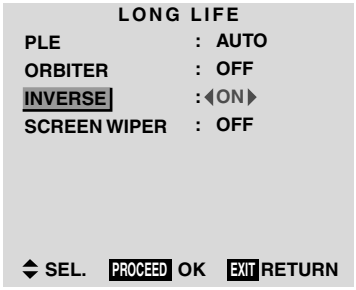
Setting the time for "INVERSE"

Set the "INVERSE" or "WHITE" display time and the "WAITING TIME".

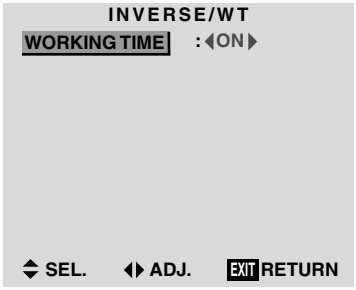
Example: Setting so that the INVERSE mode starts in 30 minutes and proceeds for one and a half hours.

Perform Steps 1-2 on Page 32, then

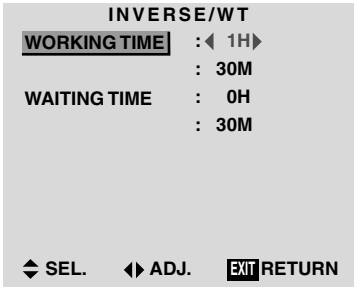
3. Use the ▲ and ▼ buttons to select "INVERSE", then use the ◀ and ▶ buttons to select "ON".



4. Press the PROCEED button.
   The "INVERSE/WT" screen appears.



5. Adjust the time using the ◀ and ▶ buttons and the ▲ and ▼ buttons.
   The mode switches as follows each time the ◀ or ▶ button is pressed.



The 1st line of the "WORKING TIME":

→ **ON or 0H ↔ 1H ↔ 2H ↔ 3H ↔ ... ↔ 12H** ←

* The "WORKING TIME" (minutes) and "WAITING TIME" cannot be set when the "WORKING TIME" is "ON".

The 2nd line of the “WORKING TIME”:

→ 0M ↔ 3M ↔ 6M ↔ 9M ↔ ... ↔ 57M ←

The 1st line of the “WAITING TIME”:

→ 0H ↔1H ↔ 2H ↔ 3H ↔ ... ↔ 12H ←

The 2nd line of the “WAITING TIME”:

→ 0M ↔ 3M ↔ 6M ↔ 9M ↔ ... ↔ 57M ←

6. *Once the setting is completed...*
   Press the EXIT button several times to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ Setting the time

WORKING TIME

Set the length of time the “INVERSE/WT” mode lasts. When the WORKING TIME is set to “ON”, the “INVERSE/WT” mode stays in the on state.

WAITING TIME

Set the length of time until the “INVERSE/WT” mode starts.

* The “WORKING TIME” and “WAITING TIME” can be set for up to 12 hours and 45 minutes in units of 3 minutes.

■ To select “ON” for the “WORKING TIME”...

Set the hours of the WORKING TIME to 0H and the minutes to 0M. “ON” will be displayed.

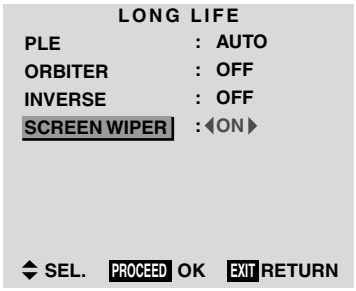
Setting the time for “SCREEN WIPER”

Set the “SCREEN WIPER” operation time, “WAITING TIME”, and “SPEED”.

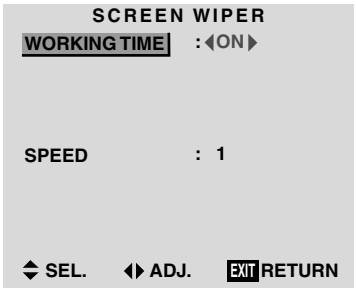
Example: Setting so that the SCREEN WIPER mode starts in 30 minutes and proceeds for one and a half hours.

Perform Steps 1-2 on Page 32, then:

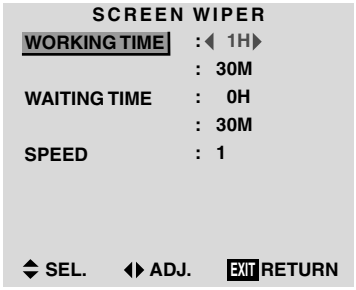
3. Use the ▲ and ▼ buttons to select “SCREEN WIPER”, then use the ◀ and ▶ buttons to select “ON”.



4. Press the PROCEED button.
   The “SCREEN WIPER” screen appears.



5. Adjust the time and speed using the ◀ and ▶ buttons and the ▲ and ▼ buttons.
   The mode switches as follows each time the ◀ and ▶ button is pressed.



The 1st line of the “WORKING TIME”:

→ ON or 0H ↔ 1H ↔ 2H ↔ 3H ↔ ... ↔ 12H ←

* The “WORKING TIME” (minutes) and “WAITING TIME” cannot be set when the “WORKING TIME” is “ON”.

The 2nd line of the “WORKING TIME”:

→ 0M ↔ 3M ↔ 6M ↔ 9M ↔ ... ↔ 57M←

The 1st line of the “WAITING TIME”:

→ 0H ↔1H ↔ 2H ↔ 3H ↔ ... ↔ 12H←

The 2nd line of the “WAITING TIME”:

→ 0M ↔ 3M ↔ 6M ↔ 9M ↔ ... ↔ 57M←

“SPEED”:

→ 1↔ 2 ↔ 3 ↔ 4 ↔ 5←

6. *Once the setting is completed...*
   Press the EXIT button several times to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ Setting the time

WORKING TIME

Set the length of time the “SCREEN WIPER” mode lasts.
When the WORKING TIME is set to “ON”, the “SCREEN WIPER” mode stays in the state.

WAITING TIME

Set the length of time until the “SCREEN WIPER” mode starts.

SPEED

Set the moving speed for the “SCREEN WIPER”. The speed decreases as the number increases.

* The “WORKING TIME” and “WAITING TIME” can be set for up to 12 hours and 45 minutes in units of 3 minutes.

■ To select “ON” for “WORKING TIME”...

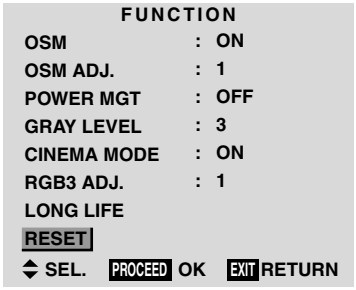
Set the hours of the “WORKING TIME” to 0H and the minutes to 0M. “ON” will be displayed.

Resetting to the default values

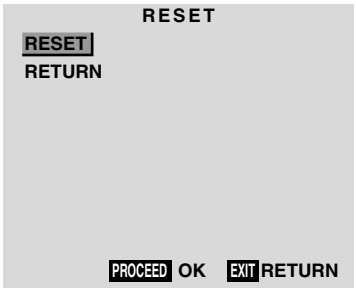
Use these operations to restore all the picture adjustments, audio settings, to the factory default values.
Refer to page 19 for items to be reset.

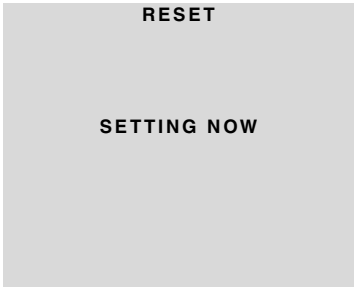
Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “FUNCTION”, then press the PROCEED button.
   The “FUNCTION” screen appears.
2. Use the ▲ and ▼ buttons to select “RESET”, then press the PROCEED button.



   The “RESET” screen appears.
3. Use the ▲ and ▼ buttons to select “RESET”, then press the PROCEED button.





   When the “SETTING NOW” screen disappears, the screen will be restored to the previous “RESET” mode, then all the settings are restored to the default values.
4. *Once the setting is completed ...*
   Press the EXIT button.
   To delete the main menu, press the EXIT button once more.

Options Settings Menu

Setting the allocation of the audio connectors

Setting the AUDIO 1, 2, and 3 connectors to the desired input.

Example: Setting “AUDIO 1” to “VIDEO 2”

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “OPTIONS”, then press the PROCEED button.
   The “OPTIONS” screen appears.
2. Use the ▲ and ▼ buttons to select “AUDIO 1”.

3. *To set the AUDIO1 to “VIDEO2”...*
   Use the ◀ and ▶ buttons to select “VIDEO2”.
   The mode switches as follows each time the ◀ or ▶ button is pressed:

4. *Once the setting is completed...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ AUDIO INPUT

A single audio input cannot be selected as the audio channel for more than one input terminal.

■ Restoring the factory default settings

Select “RESET” under the function menu. Note that this also restores other settings to the factory defaults.

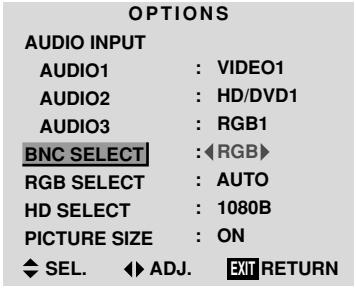
Setting the BNC connectors

Select whether to set the input of the 5 BNC connectors to RGB or component.

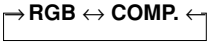
Example: Set the BNC SELECT mode to “COMP.”

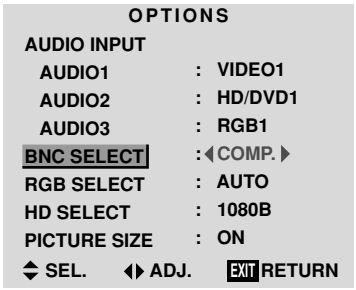
Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “OPTIONS”, then press the PROCEED button.
   The “OPTIONS” screen appears.
2. Use the ▲ and ▼ buttons to select “BNC SELECT”.



3. *To set the BNC SELECT mode to “COMP.”...*
   Use the ◀ and ▶ buttons to select “COMP.”.
   The mode switches as follows each time the ◀ or ▶ button is pressed:





4. *Once the setting is completed...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ BNC SELECT

RGB ..... Use the 5BNC terminal for RGB input.
COMP. ..... Use the 3BNC terminal for component input.

■ Restoring the factory default settings

Select “RESET” under the function menu. Note that this also restores other settings to the factory defaults.

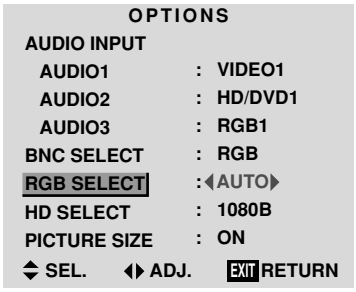
Setting a computer image to the correct RGB select screen

With the computer image, select the RGB Select mode for a moving image such as (video) mode, wide mode or digital broadcast.

Example: Setting the “RGB SELECT” mode to “MOTION ”

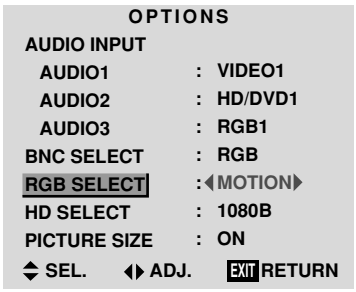
Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “OPTIONS”, then press the PROCEED button.
   The “OPTIONS” screen appears.
2. Use the ▲ and ▼ buttons to select “RGB SELECT”.



3. *To set the RGB select mode to “MOTION” ...*
   Use the ◀ and ▶ buttons to select “MOTION”.
   The mode switches as follows each time the ◀ or ▶ button is pressed:

   → AUTO ↔ STILL ↔ MOTION ↔ WIDE1 ↔ WIDE2 ↔ DTV ←



4. *Once the setting is completed ...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ RGB SELECT modes

One of these 6 modes must be selected in order to display the following signals correctly.

AUTO ..... Select the suitable mode for the specifications of input signals as listed in the table “Computer input signals supported by this system” on page 55.

STILL ..... To display VESA standard signals. (Use this mode for a still image from a computer.)

MOTION ..... The video signal (from a scan converter) will be converted to RGB signals to make the picture more easily viewable. (Use this mode for a motion image from a computer.)

WIDE1 ..... When an 852 dot × 480 line signal with a horizontal frequency of 31.7kHz is input, the image may be compressed horizontally. To prevent this, set RGB SELECT to WIDE1.

WIDE2 ..... When an 848 dot × 480 line signal with a horizontal frequency of 31.0 kHz is input, the image may be compressed horizontally. To prevent this, set RGB SELECT to WIDE2.

DTV ..... Set this mode when watching digital broadcasting (480P).

See page 55 for the details of the above settings.

■ Restoring the factory default settings

Select “RESET” under the function menu. Note that this also restores other settings to the factory defaults.

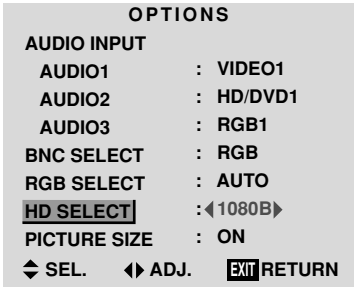
Setting high definition images to the suitable screen size

Use this procedure to set whether the number of vertical lines of the input high definition image is 1035 or 1080.

Example: Setting the “1080B” mode to “1035I”

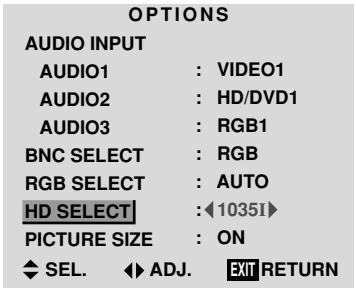
Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “OPTIONS”, then press the PROCEED button.
   The “OPTIONS” screen appears.
2. Use the ▲ and ▼ buttons to select “HD SELECT”.



3. *To set the HD SELECT mode to “1035I” ...*
   Use the ◀ and ▶ buttons to select “1035I”.
   The mode switches as follows each time the ◀ or ▶ button is pressed:

   →1080B ↔ 1035I ↔ 1080A ←



4. *Once the setting is completed ...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ HD SELECT modes

These 3 modes are not displayed in correct image automatically.

1080B ..... Standard digital broadcasts
1035I ..... Japanese “High Vision” signal format
1080A ..... Special Digital broadcasts (for example : DTC100)

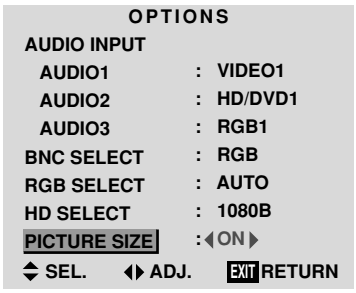
Setting the picture size for RGB input signals

Use this procedure to switch the setting to “ON” or “OFF”.

Example: Setting the “ON” mode to “OFF”

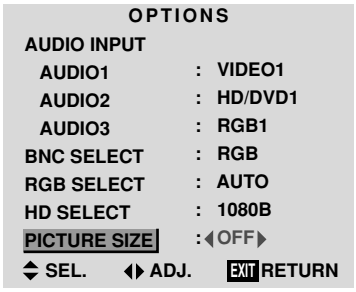
Press the PROCEED button on the remote control unit to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “OPTIONS”, then press the PROCEED button.
   The “OPTIONS” screen appears.
2. Use the ▲ and ▼ buttons to select “PICTURE SIZE”.



3. *To set PICTURE SIZE mode to “OFF”...*
   Use the ◀ and ▶ buttons to select “OFF”.
   The mode switches as follows when the ◀ or ▶ buttons are pressed:

   ON ↔ OFF



4. *Once the setting is completed ...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ PICTURE SIZE

ON ..... For RGB Input: “NORMAL” and “FULL” can be selected for Wide-Screen switching.
OFF ..... For RGB Input: “TRUE” and “FULL” can be selected for Wide-Screen switching.

■ Restoring the factory default settings

Select “RESET” under the function menu. Note that this also restores other settings to the factory defaults.

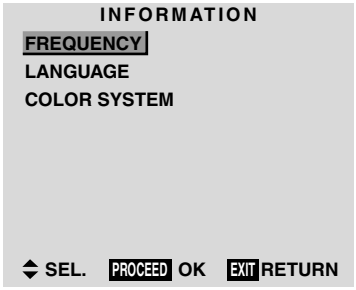
Information Menu

Checking the frequencies, polarities of input signals, and resolution

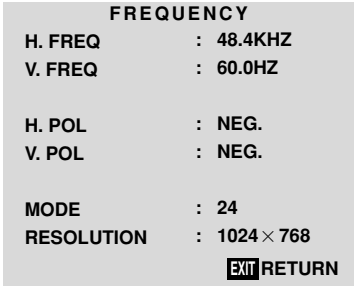
Use this function to check the frequencies and polarities of the signals currently being input from a computer, etc.

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “INFORMATION”, then press the PROCEED button.
   The “INFORMATION” screen appears.
2. Use the ▲ and ▼ buttons to select “FREQUENCY”, then press the PROCEED button.



3. The frequency is displayed.



   * Press the EXIT button to return to the previous screen.

4. *Once you have checked the frequency ...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

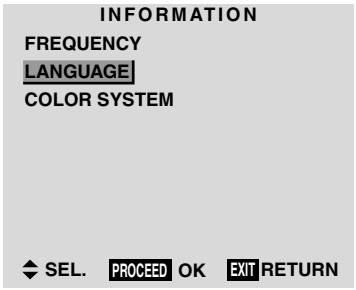
Setting the language for the menus

The menu display can be set to one of seven languages: Japanese, English, German, French, Swedish, Italian or Spanish.

Example: Setting the menu display to “DEUTSCH”

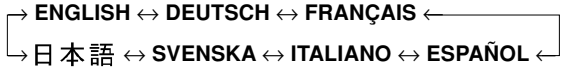
Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “INFORMATION”, then press the PROCEED button. The “INFORMATION” screen appears.
2. Use the ▲ and ▼ buttons to select “LANGUAGE”, then press the PROCEED button.



   The “LANGUAGE” screen appears.

3. *To select “ DEUTSCH ” ...*
   Use the ◀ and ▶ buttons to select “ DEUTSCH ”.
   The mode switches as follows when the ◀ and ▶ buttons are pressed:



4. Press the PROCEED button.
   The display language is switched to Deutsch.
5. *Once the setting is completed ...*
   Press the EXIT button to return to the main menu.
   To delete the main menu, press the EXIT button once more.

Information

■ Language settings

ENGLISH ..... English
DEUTSCH ..... German
FRANÇAIS ..... French
ESPAÑOL ..... Spanish
ITALIANO ..... Italian
SVENSKA ..... Swedish
日本語 ..... Japanese

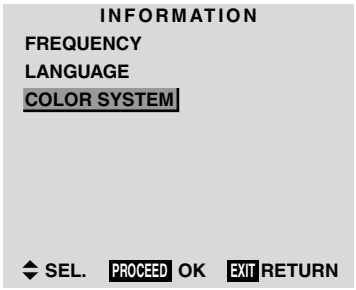
Setting the video signal format

Use these operations to set the video signal format.

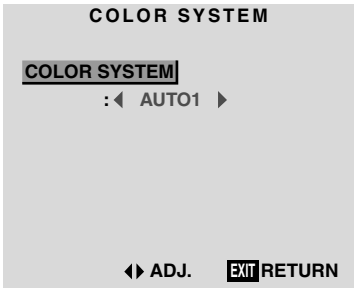
Example: Setting the video signal format to “3.58 NTSC”

Press the PROCEED button on the remote control to display the MAIN MENU on the screen, then...

1. Use the ▲ and ▼ buttons to select “INFORMATION”, then press the PROCEED button.
   The “INFORMATION” screen appears.
2. Use the ▲ and ▼ buttons to select “COLOR SYSTEM”, then press the PROCEED button.

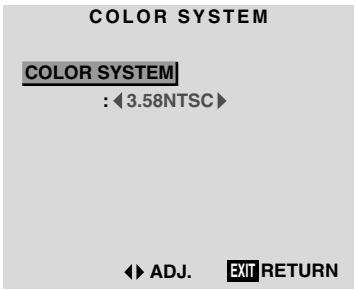


The “COLOR SYSTEM” screen appears.



3. *To select “3.58 NTSC” ...*
   Use the ◀ and ▶ buttons to select “3.58 NTSC”.
   The mode switches as follows when the ◀ and ▶ buttons are pressed:

   → **AUTO1** ↔ **AUTO2** ↔ **3.58NTSC** ↔ **4.43NTSC** ←
   → **SECAM** ↔ **PAL-M** ↔ **PAL-N** ↔ **PAL60** ↔ **PAL** ←



4. *Once the setting is completed ...*
   Press the EXIT button to return to the main menu. To delete the main menu, press the EXIT button once more.

   The color system is set to “3.58 NTSC”.

Information

■ Video signal formats

Different countries use different formats for video signals. Set to the format used in your current country.

AUTO1/2 ..... The video signals are automatically detected and the format is set accordingly.
- AUTO1: 3.58NTSC, 4.43NTSC, PAL, SECAM, PAL60
- AUTO2: PAL-M, PAL-N, 3.58NTSC

PAL (B, G) ..... This is the standard format used mainly in the United Kingdom and Germany.

SECAM ..... This is the standard format used mainly in France and Russia.

4.43 NTSC, PAL60 ..... This format is used for videos in countries using PAL and SECAM video signals.

3.58 NTSC ..... This is the standard format used mainly in Japan and the United States.

PAL-M ..... This is the standard format used mainly in Brazil.

PAL-N ..... This is the standard format used mainly in Argentina.

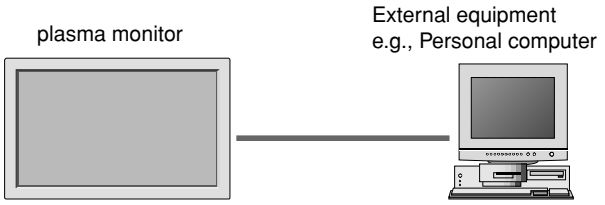
External Control

Application

These specifications cover the communications control of the plasma monitor by external equipment.

Connections

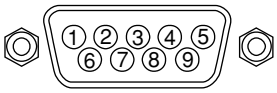
Connections are made as described below.



1) Connector on the plasma monitor side: EXTERNAL CONTROL connector.

Type of connector: D-Sub 9-pin male

No.	Pin Name
1	No Connection
2	RXD (Receive data)
3	TXD (Transmit data)
4	DTR (DTE side ready)
5	GND
6	DSR (DCE side ready)
7	RTS (Ready to send)
8	CTS (Clear to send)
9	No Connection



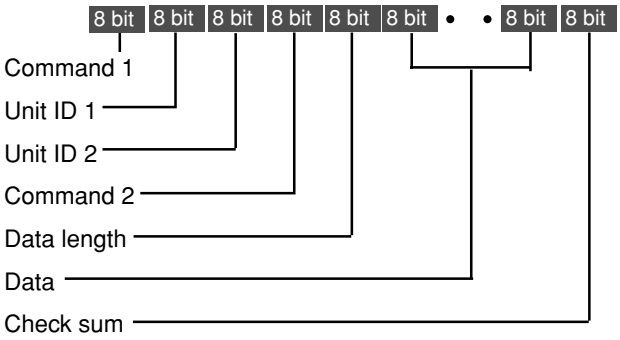
2) Connector on the external equipment side: Serial port (RS-232C) connector.
See the specifications of the equipment that is to be connected for the type of connector and the pin assignment.

3) Wiring
Use a crossed (reverse) cable.
Wire the cable so that each pair of data lines cross between the two devices. These data line pairs are RXD (Receive data) and TXD (Transmit data), DTR (DTE side ready) and DSR (DCE side ready), and RTS (Ready to send) and CTS (Clear to send).

Communication Parameters

(1) Communication system	Asynchronous
(2) Interface	RS-232C
(3) Baud rate	9600 bps
(4) Data length	8 bits
(5) Parity	Odd
(6) Stop bit	1 bit
(7) Communication code	Hex

Communication Format



Command 1

Command 1, along with command 2, is a number used to distinguish each command.
In the case of ACK, when the lower order 4 bits is FH (as in 3FH and 7FH), this indicates that the commands and data of the supported equipment have been received. When the lower order 4 bits is BH (as in 3BH and 7BH), this indicates that unsupported commands and data have been received.

Unit ID 1 and Unit ID 2

Unit ID 1 and unit ID 2 are numbers used to identify the equipment that is to be connected.
60H is used for the plasma monitor and 80H is used for external control equipment such as a personal computer.

1) Unit ID 1: Indicates the equipment sending the signal
2) Unit ID 2: Indicates the equipment receiving the signal

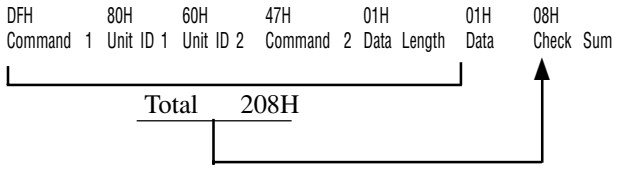
Command 2

Command 2, along with command 1, is a number used to distinguish each command.

Check Sum (CKS), Error Processing, and ACK

1) The check sum described below and RS-232C odd parity are used together for a check of the received data. The check sum is the lower order 8 bits of one frame of sent or received data comprising the sum total of Command 1, Unit ID 1 and 2, Command 2, Data Length, and Data.

Check Sum Example



2) Error Processing
- When the communication interval is vacant for more than 4 ms, thereafter a received Command 1 will be recognized. If, at this time, meaningful data cannot be recognized, that data will not be recognized (as valid data).
- An ACK will not be returned unless the receive data error, the check sum error, and the receive data are all taken in.

Command Reference List

	CMD1	CMD2	LEN
01. Power ON	9FH	4EH	00H
02. Power OFF	9FH	4FH	00H
03. Input Switch Change	DFH	47H	01H
04. VOLUME Gain Data	DFH	7FH	03H
05. AUDIO Mute On	9FH	3EH	00H
06. AUDIO Mute Off	9FH	3FH	00H
07. CONTRAST Gain Data	DFH	7FH	03H
08. BRIGHT Gain Data	DFH	7FH	03H
09. SHARPNESS Gain Data	DFH	7FH	03H
10. Color Gain Data	DFH	7FH	03H
11. TINT Gain Data	DFH	7FH	03H
12. PICTURE MODE Select	DFH	0AH	01H
13. COLOR TEMP SELECT	DFH	00H	01H
14. RED Gain Data	DFH	7FH	04H
15. GREEN Gain Data	DFH	7FH	04H
16. BLUE Gain Data	DFH	7FH	04H
17. NR MODE Set	DFH	C0H	01H
18. BASS Gain Data	DFH	7FH	03H
19. TREBLE Gain Data	DFH	7FH	03H
20. BALANCE Gain Data	DFH	7FH	03H
21. SCREEN MODE Select	DFH	51H	01H
22. V. POSITION Gain Data	DFH	7FH	03H
23. H. POSITION Gain Data	DFH	7FH	03H
24. V-HEIGHT Gain Data	DFH	7FH	03H
25. H-WIDTH Gain Data	DFH	7FH	03H
26. AUTO PICTURE Select	DFH	7FH	03H
27. PHASE Gain Data	DFH	7FH	03H
28. CLOCK Gain Data	DFH	7FH	03H
29. OSM Select	DFH	58H	01H
30. OSM ADJ. Gain Data	DFH	1AH	02H
31. POWER MGT Select	DFH	1AH	02H
32. GRAY LEVEL Set	DFH	C6H	01H
33. CINEMA MODE Set	DFH	C1H	01H
34. RGB3 ADJ. Select	DFH	1AH	02H
35. LONG LIFE Set	DFH	6BH	03H
36. INVERSE Set	DFH	C7H	03H
37. SCREEN WIPER Set	DFH	C8H	04H
38. RESET	1FH	54H	00H
39. Audio Select Set	DFH	70H	02H
40. BNC SELECT	DFH	8CH	01H
41. RGB Select	DFH	8BH	01H
42. HD Select	DFH	8AH	01H
43. PICTURE SIZE Select	DFH	2AH	01H
44. LANGUAGE Select	DFH	5BH	01H
45. COLOR SYSTEM Select	DFH	5CH	01H
46. Multi Screen Select	DFH	07H	01H
47. FREQUENCY Request	1FH	26H	00H
48. Input MODE Request	1FH	41H	00H
49. VIDEO ADJ Request	1FH	45H	00H
50. Audio Select Request	1FH	6FH	00H
51. Failure Mode Request	1FH	3FH	00H
52. MODEL NAME Request	1FH	17H	00H

01. Power ON

Function

The external control equipment switches on the power of the plasma monitor.

Transmission Data

9FH	80H	60H	4EH	00H	CKS

ACK

The plasma monitor returns the following ACK when the power is switched on.

3FH	60H	80H	4EH	00H	CKS

NOTE: Do not set the Power ON or Power OFF command continuously.

02. Power OFF

Function

The external control equipment switches off the power of the plasma monitor.

Transmission Data

9FH	80H	60H	4FH	00H	CKS

ACK

The plasma monitor returns the following ACK when the power is switched off.

3FH	60H	80H	4FH	00H	CKS

NOTE: Do not set the Power ON or Power OFF command continuously.

03. Input Switch Change

Function

The external control equipment switches the input of the plasma monitor.

Transmission Data

DFH	80H	60H	47H	01H	DATA00	CKS

DATA00: Input Select

- 01H: Video1
- 02H: Video2
- 03H: Video3
- 05H: HD (HD1 or DTV or DTV1)
- 06H: HD2 (DTV2)
- 07H: RGB1/PC1
- 08H: RGB2/PC2
- 0CH: RGB3/PC3

ACK

The plasma monitor returns the following ACK when the input is switched.

3FH	60H	80H	47H	00H	CKS

04. VOLUME Gain Data

Function

The external control equipment changes the VOLUME gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER SOUND Gain Flag 05H

DATA01: VOLUME Gain Flag 01H

DATA02: VOLUME Gain 00H: Step 0
|
0AH: Step 10 (Default)
|
2AH: Step 42

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER SOUND Gain Flag 05H

DATA01: VOLUME Gain Flag 01H

05. AUDIO Mute On

Function

The external control equipment switches on AUDIO Mute of the plasma monitor.

Transmission Data

9FH	80H	60H	3EH	00H	CKS

ACK

3FH	60H	80H	3EH	00H	CKS

06. AUDIO Mute Off

Function

The external control equipment switches off AUDIO Mute of the plasma monitor.

Transmission Data

9FH	80H	60H	3FH	00H	CKS

ACK

3FH	60H	80H	3FH	00H	CKS

07. CONTRAST Gain Data

Function

The external control equipment changes the CONTRAST gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 01H

DATA01: CONTRAST Gain Flag 07H

DATA02: CONTRAST Gain CCH : -52
|
FFH: -01
00H: 0
01H: +01
|
14H: +20

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 01H

DATA01: CONTRAST Gain Flag 07H

08. BRIGHT Gain Data

Function

The external control equipment changes the BRIGHT gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 01H

DATA01: BRIGHT Gain Flag 08H

DATA02: BRIGHT Gain E0H: -32
|
FFH: -01
00H: 0
01H: +01
|
20H: +32

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 01H

DATA01: BRIGHT Gain Flag 08H

09. SHARPNESS Gain Data

Function

The external control equipment changes the SHARPNESS gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 01H

DATA01: SHARPNESS Gain Flag 06H

DATA02: SHARPNESS Gain F0H: -16
|
FFH: -01
00H: 0
01H: +01
|
10H:+16

Only when a RGB signal is connected

DATA02: SHARPNESS Gain 01H: 1
02H: 2
03H: 3
04H: 4
05H: 5

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 01H

DATA01: SHARPNESS Gain Flag 06H

10. COLOR Gain Data

Function

The external control equipment changes the COLOR gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 01H
DATA01: COLOR Gain Flag 04H
DATA02: COLOR Gain E0H: -32
* COLOR Gain is from -22 (EAH) to +22 (16H) only during video.
FFH: -01
00H: 0
01H: +01
20H: +32

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 01H
DATA01: COLOR Gain Flag 04H

11.TINT Gain Data

Function

The external control equipment changes the TINT gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 01H
DATA01: TINT Gain Flag 05H
DATA02: TINT Gain E0H: -32
* TINT Gain is from -22 (EAH) to +22 (16H) only during video.
FFH: -01
00H: 0
01H: +01
20H: +32

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 01H
DATA01: TINT Gain Flag 05H

12. PICTURE MODE Select

Function

The external control equipment sets the picture mode of the plasma monitor.

Transmission Data

DFH	80H	60H	0AH	01H	DATA00	CKS

DATA00: 01H: MEMORY
02H: THEATER
03H: NORMAL
04H: RESET

ACK

7FH	60H	80H	0AH	01H	DATA00	CKS

DATA00: 01H: MEMORY
02H: THEATER
03H: NORMAL
04H: RESET

13. COLOR TEMP SELECT

Function

The external control equipment changes the COLOR TEMP of the plasma monitor.

Transmission Data

DFH	80H	60H	00H	01H	DATA00	CKS

DATA00: 00H: 1
01H: 2
02H: 3
03H: PRO

ACK

7FH	60H	80H	00H	01H	DATA00	CKS

DATA00: 00H: 1
01H: 2
02H: 3
03H: PRO

NOTE: Set so that at the selection of 1, 2, or 3 of COLOR TEMP change of the following R/G/B GAIN data cannot be accepted.

14. RED Gain Data

Function

The external control equipment changes the RED Gain Data of the plasma monitor. Note that this command can be accepted only when PRO is selected from COLOR TEMP.

Transmission Data

DFH	80H	60H	7FH	04H	DATA00 to DATA03	CKS

DATA00: USER PICTURE Gain Flag 01H
DATA01: RED Gain Flag 01H
DATA02: RED Gain 1 (Bias) D8H: -40
FFH: -1
00H: 0
IEH: +30
DATA03: RED Gain 2 (Drive) D8H: -40
FFH: -1
00H: 0
IEH: +30

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 01H
DATA01: RED Gain Flag 01H

15. GREEN Gain Data

Function

The external control equipment changes the GREEN Gain Data of the plasma monitor. Note that this command can be accepted only when PRO is selected from COLOR TEMP.

Transmission Data

DFH	80H	60H	7FH	04H	DATA00 to DATA03	CKS

DATA00: USER PICTURE Gain Flag 01H
DATA01: GREEN Gain Flag 02H
DATA02: GREEN Gain 1 (Bias) D8H: -40
FFH: -1
00H: 0
IEH: +30
DATA03: GREEN Gain2 (Drive) D8H: -40
FFH: -1
00H: 0
IEH: +30

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 01H
DATA01: GREEN Gain Flag 02H

16. BLUE Gain Data

Function

The external control equipment changes the BLUE Gain Data of the plasma monitor. Note that this command can be accepted only when PRO is selected from COLOR TEMP.

Transmission Data

DFH	80H	60H	7FH	04H	DATA00 to DATA03	CKS

DATA00: USER PICTURE Gain Flag 01H
DATA01: BLUE Gain Flag 03H
DATA02: BLUE Gain1(Bias) D8H:-40
FFH:-1
00H: 0
IEH: +30
DATA03: BLUE Gain2(Drive) D8H: -40
FFH:-1
00H: 0
IEH:+30

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 01H
DATA01: BLUE Gain Flag 03H

17. NR MODE Set

Function

The external control equipment sets the NR (Noise Reduction) mode of the plasma monitor.

Transmission Data

DFH	80H	60H	C0H	01H	DATA00	CKS

DATA00: 01H: NR OFF
02H: NR-1
03H: NR-2
04H: NR-3

ACK

7FH	60H	80H	C0H	01H	DATA00	CKS

DATA00: 01H: NR OFF
02H: NR-1
03H: NR-2
04H: NR-3

18. BASS Gain Data

Function

The external control equipment changes the BASS gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 05H
DATA01: BASS Gain Flag 03H
DATA02: BASS Gain F3H: -13
FFH: -01
00H: 0
01H: +01
0DH: +13

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 05H
DATA01: BASS Gain Flag 03H

19. TREBLE Gain Data

Function

The external control equipment changes the TREBLE gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 05H
DATA01: TREBLE Gain Flag 04H
DATA02: TREBLE Gain F3H: -13
FFH: -01
00H: 0
01H: +01
0DH: +13

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 05H
DATA01: TREBLE Gain Flag 04H

20. BALANCE Gain Data

Function

The external control equipment changes the BALANCE gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 05H
DATA01: BALANCE Gain Flag 02H
DATA02: BALANCE Gain EAH: -22
FFH: -01
00H: 0
01H: +01
16H: +22

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 05H
DATA01: BALANCE Gain Flag 02H

21. SCREEN MODE Select

Function

The external control equipment switches the screen mode of the plasma monitor.

Transmission Data

DFH	80H	60H	51H	01H	DATA00	CKS

DATA00: 02H: STADIUM
03H: ZOOM
04H: NORMAL
05H: FULL
06H: TRUE (REAL)

ACK

7FH	60H	80H	51H	01H	DATA00	CKS

DATA00: 02H: STADIUM
03H: ZOOM
04H: NORMAL
05H: FULL
06H: TRUE (REAL)

22. V. POSITION Gain Data

Function

The external control equipment changes the V. POSITION gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: V. POSITION Gain Flag 01H
DATA02: V. POSITION Gain C0H: -64
FFH: -01
00H: 0
01H: +01
40H: +64

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: V. POSITION Gain Flag 01H

23. H. POSITION Gain Data

Function

The external control equipment changes the H. POSITION gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: H. POSITION Gain Flag 02H
DATA02: H. POSITION Gain 80H: -128
FFH: -01
00H: 0
01H: +01
7FH: +127

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: H. POSITION Gain Flag 02H

24. V-HEIGHT Gain Data

Function

The external control equipment changes the V-HEIGHT gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: V-HEIGHT Gain Flag 07H
DATA02: V-HEIGHT Gain 00H: 0
40H: +64

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: V-HEIGHT Gain Flag 07H

25. H-WIDTH Gain Data

Function

The external control equipment changes the H-WIDTH gain data of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: H-WIDTH Gain Flag 08H
DATA02: H-WIDTH Gain 00H: 0
40H: +64

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: H-WIDTH Gain Flag 08H

26. AUTO PICTURE Select

Function

The external control equipment switches on or off the AUTO PICTURE of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: AUTO PICTURE Select Flag 09H
DATA02: 00H: ON
01H: OFF

ACK

7FH	60H	80H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: AUTO PICTURE Select Flag 09H
DATA02: 00H: ON
01H: OFF

27. PHASE Gain Data

Function

The external control equipment changes the PHASE gain data (Phase) of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: PHASE Gain Flag 03H
DATA02: PHASE Gain 00H: 0
|
2CH: +44

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: PHASE Gain Flag 03H

28. CLOCK Gain Data

Function

The external control equipment changes the CLOCK gain data (ratio of frequency division) of the plasma monitor.

Transmission Data

DFH	80H	60H	7FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: CLOCK Gain Flag 04H
DATA02: CLOCK Gain C0H: -64
|
FFH: -01
00H: 0
01H: +01
|
40H: +64

ACK

7FH	60H	80H	7FH	02H	DATA00	DATA01	CKS

DATA00: USER PICTURE Gain Flag 03H
DATA01: CLOCK Gain Flag 04H

29. OSM Select

Function

The external control equipment switches on or off the on-screen menu (OSM) of the plasma monitor.

Transmission Data

DFH	80H	60H	58H	01H	DATA00	CKS

DATA00: 01H: On-Screen menu On
02H: On-Screen menu Off

ACK

7FH	60H	80H	58H	01H	DATA00	CKS

DATA00: 01H: On-Screen menu On
02H: On-Screen menu Off

On-Screen menu On/Off is equivalent to the OSM menu item under the FUNCTION menu.

*Operation is as described in the table below.

Operation	On-Screen Menu (OSM)			
	Display of items and adjustments on the menu		Volume display, input display, and screen size display	
	When screen menu is ON	When screen menu is OFF	When screen menu is ON	When screen menu is OFF
Remote control operation	Yes	Yes	Yes	No
Personal computer control operation	No	No	Yes	No

30. OSM ADJ. Gain Data

Function

The external control equipment sets the position of the OSM menu of the plasma monitor.

Transmission Data

DFH	80H	60H	1AH	02H	DATA00	DATA01	CKS

DATA00: OSM ADJ. Gain Flag 02H
DATA01: 01H: 1
|
09H: 9

ACK

7FH	60H	80H	1AH	01H	DATA00	CKS

DATA00: OSM ADJ. Gain Flag 02H

31. POWER MGT Select

Function

The external control equipment switches on or off the POWER MANAGEMENT of the plasma monitor.

Transmission Data

DFH	80H	60H	1AH	02H	DATA00	DATA01	CKS

DATA00: POWER MGT Select 03H
DATA01: 01H: ON
02H: OFF

ACK

7FH	60H	80H	1AH	02H	DATA00	DATA01	CKS

DATA00: POWER MGT Select 03H
DATA01: 01H: ON
02H: OFF

32. GRAY LEVEL Set

Function

The external control equipment sets the GRAY LEVEL of the plasma monitor.

Transmission Data

DFH	80H	60H	C6H	01H	DATA00	CKS

DATA00: GRAY LEVEL 00H: 0
|
0FH: 15

ACK

7FH	60H	80H	C6H	01H	DATA00	CKS

DATA00: GRAY LEVEL 00H: 0
|
0FH: 15

33. CINEMA MODE Set

Function

The external control equipment switches on or off the CINEMA MODE of the plasma monitor.

Transmission Data

DFH	80H	60H	C1H	01H	DATA00	CKS

DATA00: CINEMA MODE Set 01H: ON
02H: OFF

ACK

7FH	60H	80H	C1H	01H	DATA00	CKS

DATA00: CINEMA MODE Set 01H: ON
02H: OFF

34. RGB3 ADJ. Select

Function

The external control equipment sets the RGB3 ADJUST of the plasma monitor.

Transmission Data

DFH	80H	60H	1AH	02H	DATA00	DATA01	CKS

DATA00: RGB3 ADJ. Select 06H
DATA01: 01H: 1
02H: 2
03H: 3

ACK

7FH	60H	80H	1AH	02H	DATA00	DATA01	CKS

DATA00: RGB3 ADJ. Select 06H
DATA01: 01H: 1
02H: 2
03H: 3

35. LONG LIFE Set

Function

The external control equipment sets the PLE, ORBITER, and INVERSE (inverse of image brightness) of the plasma monitor.

Transmission Data

DFH	80H	60H	6BH	03H	DATA00	DATA01	DATA02	CKS

DATA00: PLE 01H: AUTO
02H: LOCK
DATA01: INVERSE 01H: ON
02H: OFF
03H: WHITE
DATA02: ORBITER (PICTURE SHIFT) 01H: ON
02H: OFF

ACK

The plasma monitor returns the following ACK when setting the PLE, ORBITER, and INVERSE (inverse of image brightness):

3FH	60H	80H	6BH	00H	CKS

36. INVERSE Set

Function

The external control equipment sets the INVERSE (inverse of image brightness) and the WHITE of the plasma monitor.

Transmission Data

DFH	80H	60H	C7H	03H	DATA00	DATA01	DATA02	CKS

DATA00 : INVERSE/WHITE
- 00H: No operation
- 01H: ON(INVERSE)
- 02H: OFF
- 03H: WHITE

DATA01 : WORKING TIME
- 00H: ON
- 01H: 03M (minutes)
- 02H: 06M (minutes)
- |
- FFH: 12H (hours) and 45M (minutes)

DATA02 : WAITING TIME
- 01H: 03M (minutes)
- 02H: 06M (minutes)
- |
- FFH: 12H (hours) and 45M (minutes)

ACK

3FH	60H	80H	C7H	00H	CKS

NOTE: The WORKING TIME and the WAITING TIME can be set in units of 3 minutes.
Example: 03H=9 minutes
1EH=1 hour and 30 minutes

37. SCREEN WIPER Set

Function

The external control equipment sets the SCREEN WIPER of the plasma monitor.

Transmission Data

DFH	80H	60H	C8H	04H	DATA00 to	DATA03	CKS

DATA00 : SCREEN WIPER
- 00H: No operation
- 01H: ON
- 02H: OFF

DATA01 : WORKING TIME
- 00H: ON
- 01H: 03M (minutes)
- 02H: 06M (minutes)
- |
- FFH: 12H (hours) and 45M (minutes)

DATA02 : WAITING TIME
- 01H: 03M (minutes)
- 02H: 06M (minutes)
- |
- FFH: 12H (hours) and 45M (minutes)

DATA03 : SPEED
- 01H: 1
- |
- 05H: 5

ACK

3FH	60H	80H	C8H	00H	CKS

NOTE: The WORKING TIME and the WAITING TIME can be set in units of 3 minutes.
Example: 03H=9 minutes
1EH=1 hour and 30 minutes

38. RESET

Function

The external control equipment resets the user adjustment of the plasma monitor.

Transmission Data

1FH	80H	60H	54H	00H	CKS

ACK

3FH	60H	80H	54H	00H	CKS

39. Audio Select Set

Function

The external control equipment sets combinations of audio and video inputs for the plasma monitor.

Transmission Data

DFH	80H	60H	70H	02H	DATA00	DATA01	CKS

DATA00: AUDIO INPUT
- 01H: AUDIO 1
- 02H: AUDIO 2
- 03H: AUDIO 3

DATA01: VISUAL INPUT
- 01H: Video 1
- 02H: Video 2
- 03H: Video 3
- 05H:HD (HD1 or DTV or DTV1)
- 06H: HD2 (DTV2)
- 07H: RGB 1/ PC 1
- 08H: RGB 2/ PC 2
- 0CH: RGB 3/ PC 3

ACK

The plasma monitor returns the following ACK when the input is switched.

3FH	60H	80H	70H	00H	CKS

* The plasma monitor returns “Not Available” when selecting the video input same as the one set at one of the AUDIO 1 to 3.

Example:

The plasma monitor returns “Not Available” when selecting the VIDEO1 for AUDIO2 or VIDEO3 after VIDEO1 has been set to AUDIO1.

40. BNC SELECT

Function

The external control equipment sets the BNC SELECT of the plasma monitor.

Transmission Data

DFH	80H	60H	8CH	01H	DATA00	CKS

DATA00 : BNC SELECT
- 01H: RGB
- 02H: Component

ACK

The plasma monitor returns the following ACK when setting the BNC SELECT:

7FH	60H	80H	8CH	01H	DATA00	CKS

DATA00 : BNC SELECT
- 01H: RGB
- 02H: Component

41. RGB Select

Function

The external control equipment sets the RGB SELECT of the plasma monitor.

Transmission Data

DFH	80H	60H	8BH	01H	DATA00	CKS

DATA00:
- 01H: AUTO
- 02H: STILL
- 03H: MOTION
- 04H: WIDE1
- 05H: WIDE2
- 06H: DTV

ACK

7FH	60H	80H	8BH	01H	DATA00	CKS

DATA00:
- 01H: AUTO
- 02H: STILL
- 03H: MOTION
- 04H: WIDE1
- 05H: WIDE2
- 06H: DTV

42. HD Select

Function

The external control equipment sets the HD SELECT of the plasma monitor.

Transmission Data

DFH	80H	60H	8AH	01H	DATA00	CKS

DATA00:
- 01H: 1035I
- 02H: 1080A
- 03H: 1080B

ACK

7FH	60H	80H	8AH	01H	DATA00	CKS

DATA00:
- 01H: 1035I
- 02H: 1080A
- 03H: 1080B

43. PICTURE SIZE Select

Function

The external control equipment sets the PICTURE SIZE SELECT of the plasma monitor.

Transmission Data

DFH	80H	60H	2AH	01H	DATA00	CKS

DATA00:
- 01H: ON
- 02H: OFF

ACK

7FH	60H	80H	2AH	01H	DATA00	CKS

DATA00:
- 01H: ON
- 02H: OFF

44. LANGUAGE Select

Function

The external control equipment sets the LANGUAGE SELECT of the plasma monitor.

Transmission Data

DFH	80H	60H	5BH	01H	DATA00	CKS

DATA00:
- 01H: ENGLISH
- 02H: GERMAN
- 03H: FRENCH
- 04H: SPANISH
- 05H: ITALIAN
- 06H: SWEDISH
- 07H: JAPANESE

ACK

7FH	60H	80H	5BH	01H	DATA00	CKS

DATA00:
- 01H: ENGLISH
- 02H: GERMAN
- 03H: FRENCH
- 04H: SPANISH
- 05H: ITALIAN
- 06H: SWEDISH
- 07H: JAPANESE

45. COLOR SYSTEM Select

Function

The external control equipment sets the COLOR SYSTEM of the plasma monitor.

Transmission Data

DFH	80H	60H	5CH	01H	DATA00	CKS

DATA00: 01H: 3.58NTSC
02H: 4.43NTSC
03H: PAL
04H: SECAM
0AH: AUTO1
0BH: PAL60
0CH: AUTO2
0DH: PAL- M
0EH: PAL- N

ACK

7FH	60H	80H	5CH	01H	DATA00	CKS

DATA00: 01H: 3.58NTSC
02H: 4.43NTSC
03H: PAL
04H: SECAM
0AH: AUTO1
0BH: PAL60
0CH: AUTO2
0DH: PAL- M
0EH: PAL- N

46. Multi Screen Select

Function

The external control equipment selects single screen mode or multi screen mode of the display.

Transmission Data

DFH	80H	60H	07H	01H	DATA00	CKS

DATA00: Multi Screen
00H: Single screen
01H: Side by Side1 (Same size screen)
02H: Side by Side2 (Left screen smaller)
03H: Picture in Picture sub screen L1
04H: Picture in Picture sub screen R1
05H: Side by Side3 (Left screen bigger)
06H: Picture in Picture sub screen L2
07H: Picture in Picture sub screen R2
08H: Picture in Picture sub screen L3
09H: Picture in Picture sub screen R3
0AH: Picture in Picture sub screen L4
0BH: Picture in Picture sub screen R4
10H: SWAP (The screen of the right and the left interchanges)
Side by Side
20H: Active Left
21H: Active Right
Picture in Picture
30H: Active Main
31H: Active Sub

ACK

The display returns the following ACK.

7FH	60H	80H	07H	01H	DATA00	CKS

DATA00: Multi Screen
00H: Single screen
01H: Side by Side1 (Same size screen)
02H: Side by Side2 (Left screen smaller)
03H: Picture in Picture sub screen L1
04H: Picture in Picture sub screen R1
05H: Side by Side3 (Left screen bigger)
06H: Picture in Picture sub screen L2
07H: Picture in Picture sub screen R2
08H: Picture in Picture sub screen L3
09H: Picture in Picture sub screen R3
0AH: Picture in Picture sub screen L4
0BH: Picture in Picture sub screen R4
10H: SWAP (The screen of the right and the left interchanges)
Side by Side
20H: Active Left
21H: Active Right
Picture in Picture
30H: Active Main
31H: Active Sub

When other commands (except POWER OFF) are sent while the screens are switching with this command, the other command will be returned as "Not Available" until screen switching is finished.

47. FREQUENCY Request

Function

The external control equipment inquires the Horizontal frequency, Vertical frequency, Horizontal sync polarity, Vertical sync polarity, Mode, and Resolution of the plasma monitor.

Transmission Data

1FH	80H	60H	26H	00H	CKS

ACK

7FH	60H	80H	26H	0BH	DATA00 to	DATA10	CKS

Horizontal frequency

DATA00: Integer part
00H: 0 (No signal: 00H)
|
FFH: 256

DATA01: One decimal place
00H: 0 (No signal: 00H)
|
09H: 9

Vertical frequency

DATA02: Integer part
00H: 0 (No signal: 00H)
|
FFH: 256

DATA03: One decimal place
00H: 0 (No signal: 00H)
|
09H: 9

Horizontal sync polarity

DATA04: 00H: –
01H: Positive
02H: Negative

Vertical sync polarity

DATA05: 00H: –
01H: Positive
02H: Negative

MODE

DATA06:	00H:	No signal	–
	01H to 80H:	RGB signal	Identification number of PC mode
	81H:	Video signal	3.58NTSC
	82H:		4.43NTSC
	83H:		PAL
	84H:		PAL- M
	85H:		PAL- N
	86H:		PAL60
	87H:		SECAM
	88H:		B/W60
	89H:		B/W50
	A0H:	HD/DVD/DTV signal	480I
	A1H:		480P
	A2H:		576I
	A3H:		576P
	A4H:		720P
	A5H:		1035I
	A6H:		1080I

RESOLUTION

DATA07: Dots (Low-order byte)
00H: 0 (No signal: 00H)
|
FFH: 256

DATA08: Dots (High-order byte)
00H: 257 (No signal: 00H)
|
FFH

DATA09: Lines (Low-order byte)
00H: 0 (No signal: 00H)
|
FFH: 256

DATA10: Lines (High-order byte)
00H: 257 (No signal: 00H)
|
FFH

48. Input MODE Request

Function

The display returns the current input information by the external control equipment' s request.

Transmission Data

1FH	80H	60H	41H	00H	CKS

ACK

7FH	60H	80H	41H	01H	DATA00	CKS

DATA00: Input Select

01H: Video1	02H: Video2
03H: Video3	04H: HD (HD1 or DTV or DTV1)
05H: RGB1/PC1	06H: RGB2/PC2
0AH: DVD (DVD1)	0CH: HD2 (DTV2)
0DH: DVD2	0EH: RGB3/PC3

49. VIDEO ADJ Request

Function

The display returns the video adjustments information by the external control equipment's request.

Transmission Data

1FH	80H	60H	45H	00H	CKS

ACK

7FH	60H	80H	45H	0CH	DATA00 to DATA11	CKS

DATA00: RED Gain(Bias)

D8H: -40
|
FFH: -1
00H: 0
|
IEH: +30

DATA01: GREEN Gain(Bias)

D8H: -40
|
FFH: -1
00H: 0
|
IEH: +30

DATA02: BLUE Gain(Bias)

D8H: -40
|
FFH: -1
00H: 0
|
IEH: +30

DATA03: COLOR Gain

* COLOR Gain is from -22 (EAH) to +22 (16H) only during video.

E0H: -32
|
FFH: -01
00H: 0
01H: +01
|
20H: +32

DATA04: TINT Gain

* TINT Gain is from -22 (EAH) to +22 (16H) only during video.

E0H: -32
|
FFH: -01
00H: 0
01H: +01
|
20H: +32

DATA05: SHARPNESS Gain

F0H: -16
|
FFH: -01
00H: 0
01H: +01
|
10H: +16

DATA06: CONTRAST Gain

CCH: -52
|
FFH: -01
00H: 0
01H: +01
|
14H: +20

DATA07: BRIGHT Gain

E0H: -32
|
FFH: -01
00H: 0
01H: +01
|
20H: +32

DATA08: RED Gain(Drive)

D8H: -40
|
FFH: -1
00H: 0
|
IEH: +30

DATA09: GREEN Gain(Drive)

D8H: -40
|
FFH: -1
00H: 0
|
IEH: +30

DATA10: BLUE Gain(Drive)

D8H: -40
|
FFH: -1
00H: 0
|
IEH: +30

DATA11: COLOR TEMP

00H: 1
01H: 2
02H: 3
03H: PRO

50. Audio Select Request

Function

The external control equipment inquires the current combinations of audio and video inputs for the plasma monitor.

Transmission Data

1FH	80H	60H	6FH	00H	CKS

ACK

The plasma monitor returns the following ACK:

7FH	60H	80H	6FH	03H	DATA00	DATA01	DATA02	CKS

DATA00: AUDIO 1
01H – 0CH: VISUAL INPUT DATA
DATA01: AUDIO 2
01H – 0CH: VISUAL INPUT DATA
DATA02: AUDIO 3
01H – 0CH: VISUAL INPUT DATA

VISUAL INPUT DATA
01H: Video 1
02H: Video 2
03H: Video 3
05H: HD (HD1 or DTV or DTV 1)
06H: HD2 (DTV2)
07H: RGB 1 /PC 1
08H: RGB 2 /PC 2
0CH: RGB 3 /PC 3

51. Failure Mode Request

Function

The external control equipment inquires the detection of failures of the plasma monitor.

Transmission Data

1FH	80H	60H	3FH	00H	CKS

ACK

The plasma monitor returns the following ACK:

7FH	60H	80H	3FH	02H	DATA00	DATA01	CKS

DATA00: FAILURE MODE 1
Bit 0 : PDP MODULE
0: Abnormal
1: Normal
Bit 1 : 1: fixed (backup)
Bit 2 : TEMPERATURE
0: Abnormal
1: Normal
Bit 3 : FAN
0: Abnormal
1: Normal
Bit 4 : 1: fixed (backup)
Bit 5 : 1: fixed (backup)
Bit 6 : 1: fixed (backup)
Bit 7 : 1: fixed (backup)
DATA01: FAILURE MODE 2
Bit 0–7 : 1: fixed (backup)

52. MODEL NAME Request

Function

The external control equipment inquires the product code of the plasma monitor.

Transmission Data

1FH	80H	60H	17H	00H	CKS

ACK

The plasma monitor returns the following ACK:

7FH	60H	80H	17H	0CH	DATA00 to	DATA11	CKS

DATA00 : 1st character of the product code
DATA01 : 2nd character of the product code
DATA11 : 12th character of the product code

NOTE:

Received data (Hex)	Corresponding character
00H	0
01H	1
08H	8
09H	9
10H	A
11H	B
12H	C
28H	Y
29H	Z
80H	- (Hyphen)
96H	(Blank)

If there are fewer than 12 characters in the product code, product code would be padded right with blanks.

Example: If the product code of your plasma monitor is “PX-50XM2A”, the returned codes would be as follows.

DATA00: 1FH
DATA01: 27H
DATA02: 80H
DATA03: 05H
DATA04: 00H
DATA05: 27H
DATA06: 1CH
DATA07: 02H
DATA08: 10H
DATA09: 96H
DATA10: 96H
DATA11: 96H

Table of Signals Supported

Supported resolution

- When the screen mode is NORMAL, each signal is converted to a 1024 dots × 768 lines signal. (Except for *[2, 3, 4])
- When the screen mode is TRUE, the picture is displayed in the original resolution.
- When the screen mode is FULL, each signal is converted to a 1364 dots × 768 lines signal. (Except for *[3])

Computer input signals supported by this system

Model / Signal Type	Dots × lines	Vertical frequency (Hz)	Horizontal frequency (kHz)	Sync Polarity		Presence		Screen mode			RGB select*[5]	DVI
				Horizontal	Vertical	Horizontal	Vertical	NORMAL (4:3)	TRUE	FULL (16:9)		
	640×400	70.1	31.5	NEG	NEG	YES	YES	YES*[2]	YES	YES	– –	NO
*IBM PC/AT compatible computers	640×480	59.9	31.5	NEG	NEG	YES	YES	YES	YES	YES	STILL	YES
		72.8	37.9	NEG	NEG	YES	YES	YES	YES	YES	– –	YES
		75.0	37.5	NEG	NEG	YES	YES	YES	YES	YES	STILL	YES
		85.0	43.3	NEG	NEG	YES	YES	YES	YES	YES	– –	YES
		100.4	51.1	NEG	NEG	YES	YES	YES	YES	YES	– –	YES
		120.4	61.3	NEG	NEG	YES	YES	YES	YES	YES	– –	YES
	848×480	60.0	31.0	POS	POS	YES	YES	– –	YES	YES	WIDE2	YES
	852×480*[1]	60.0	31.7	NEG	NEG	YES	YES	– –	YES	YES	WIDE1	YES
	800×600	56.3	35.2	POS	POS	YES	YES	YES	YES	YES	STILL	YES
		60.3	37.9	POS	POS	YES	YES	YES	YES	YES	STILL	YES
		72.2	48.1	POS	POS	YES	YES	YES	YES	YES	– –	YES
		75.0	46.9	POS	POS	YES	YES	YES	YES	YES	– –	YES
		85.1	53.7	POS	POS	YES	YES	YES	YES	YES	– –	YES
		99.8	63.0	POS	POS	YES	YES	YES	YES	YES	– –	YES
		120.0	75.7	POS	POS	YES	YES	YES	YES	YES	– –	YES
	1024×768	60.0	48.4	NEG	NEG	YES	YES	YES*[3]	– –	YES	STILL	YES
		70.1	56.5	NEG	NEG	YES	YES	YES*[3]	– –	YES	– –	YES
		75.0	60.0	POS	POS	YES	YES	YES*[3]	– –	YES	STILL	YES
		85.0	68.7	POS	POS	YES	YES	YES*[3]	– –	YES	– –	YES
		100.6	80.5	NEG	NEG	YES	YES	YES*[3]	– –	YES	– –	NO
	1152×864	75.0	67.5	POS	POS	YES	YES	YES	– –	YES	STILL	YES
	1280×768	56.2	45.1	POS	POS	YES	YES	– –	– –	YES	WIDE1	NO
	1360×765	60.0	47.7	POS	POS	YES	YES	– –	– –	YES*[3]	WIDE1	NO
	1360×768	60.0	47.7	POS	POS	YES	YES	– –	– –	YES*[3]	WIDE1	NO
	1376×768	59.9	48.3	NEG	POS	YES	YES	– –	– –	YES	WIDE2	YES
	1280×1024	60.0	64.0	POS	POS	YES	YES	YES*[4]	– –	YES	STILL	YES
		75.0	80.0	POS	POS	YES	YES	YES*[4]	– –	YES	– –	NO
		85.0	91.1	POS	POS	YES	YES	YES*[4]	– –	YES	– –	NO
	1600×1200	60.0	75.0	POS	POS	YES	YES	YES	– –	YES	– –	NO
		65.0	81.3	POS	POS	YES	YES	YES	– –	YES	– –	NO
		70.0	87.5	POS	POS	YES	YES	YES	– –	YES	– –	NO
		75.0	93.8	POS	POS	YES	YES	YES	– –	YES	– –	NO
Apple Macintosh[6]	640×480	66.7	35.0	Sync on G	Sync on G	– –	– –	YES	YES	YES	– –	NO
	832×624	74.6	49.7	Sync on G	Sync on G	– –	– –	YES	YES	YES	– –	NO
	1024×768	74.9	60.2	Sync on G	Sync on G	– –	– –	YES*[3]	– –	YES	WIDE1	NO
	1152×870	75.1	68.7	Sync on G	Sync on G	– –	– –	YES	– –	YES	WIDE1	NO
Work Station (EWS4800)	1280×1024	60.0	64.6	NEG	NEG	YES	YES	YES*[4]	– –	YES	– –	YES
		71.2	75.1	NEG	NEG	YES	YES	YES*[4]	– –	YES	– –	NO
Work Station (HP)	1280×1024	72.0	78.1	– –	– –	– –	– –	YES*[4]	– –	YES	– –	NO
						– –	– –					
Work Station (SUN)	1152×900	66.0	61.8	C Sync	C Sync	– –	– –	YES	– –	YES	– –	NO
		76.0	71.7	C Sync	C Sync	– –	– –	YES	– –	YES	– –	NO
	1280×1024	76.1	81.1	C Sync	C Sync	– –	– –	YES*[4]	– –	YES	– –	NO
Work Station (SGI)	1024×768	60.0	49.7	– –	– –	– –	– –	YES*[3]	– –	YES	– –	YES
	1280×1024	60.0	63.9	– –	– –	– –	– –	YES*[4]	– –	YES	– –	YES
IDC-3000G												
PAL625P	768×576	50.0	31.4	NEG	NEG	YES	YES	YES*[7]	– –	YES*[7]	– –	NO
NTSC525P	640×480	59.9	31.5	NEG	NEG	YES	YES	YES*[7]	– –	YES*[7]	MOTION	NO

*1 Only when using a graphic accelerator board that is capable of displaying 852×480.
*2 This signal is converted to a 1024 dots × 640 lines signal.
*3 The picture is displayed in the original resolution.
*4 The aspect ratio is 5:4. This signal is converted to a 960 dots×768 lines signal.
*5 Normally the RGB select mode suite for the input signals is set automatically. If the picture is not displayed properly, set the RGB mode prepared for the input signals listed in the table above.
*6 To connect the monitor to Macintosh computer, use the monitor adapter (D-Sub 15-pin) to your computer's video port. If your computer has a mini D-Sub 15-pin connector, you may have to use the supplied RGB cable.
*7 Other screen modes (ZOOM and STADIUM) are available as well.

NOTE:

- *While the input signals comply with the resolution listed in the table above, you may have to adjust the position and size of the picture or the fine picture because of errors in synchronization of your computer.*
- *When a 1280 dots × 1024 lines signal or 1600 dots × 1200 lines signal is input to the monitor, the picture will be compressed.*
- *This monitor has a resolution of 1365 dots × 768 lines. It is recommended that the input signal should be XGA, wide XGA, or equivalent.*
- *With digital input some signals are not accepted.*
- *The sync may be disturbed when a nonstandard signal other than the aforementioned is input.*
- *If you are connecting a composite sync signal, use the HD terminal.*

* “IBM PC/AT” and “VGA” are registered trademarks of International Business Machines, Inc. of the United States.
* “Apple Macintosh” is a registered trademark of Apple Computer, Inc. of the United States.

Troubleshooting

If the picture quality is poor or there is some other problem, check the adjustments, operations, etc., before requesting service.

Symptom	Checks	Remedy
Picture is disturbed. Sound is noisy. Remote control operates erroneously.	• Is a connected component set directly in front or at the side of the display?	• Leave some space between the display and the connected components.
The remote control does not work.	• Are the remote control's batteries worn out?	• Replace both batteries with new ones.
Monitor's power does not turn on when the remote control's power button is pressed.	• Is the monitor's power cord plugged into a power outlet?	• Plug the monitor's power cord into a power outlet.
	• Are all the monitor's indicators off?	• Press the power button on the monitor to turn on the power.
	• Are the remote control's batteries worn out?	• Replace both batteries with new ones.
Monitor does not operate when the remote control's buttons are pressed.	• Is the remote control pointed at the monitor, or is there an obstacle between the remote control and the monitor?	• Point the remote control at the monitor's remote control sensor when pressing buttons, or remove the obstacle.
	• Is direct sunlight or strong artificial light shining on the monitor's remote control sensor?	• Eliminate the light by closing curtains, pointing the light in a different direction, etc.
	• Are the remote control's batteries worn out?	• Replace both batteries with new ones.
	• The remote cable is plugged into the REMOTE IN terminal (Wired).	• Unplung the remote cable from the monitor.
	• The front panel buttons of the main unit do not function.	• The front panel buttons do not function during Control Lock.
No sound or picture is produced.	• Is the monitor's power cord plugged into a power outlet?	• Plug the monitor's power cord into a power outlet.
Picture appears but no sound is produced.	• Is the volume set at the minimum?	• Increase the volume.
	• Is the mute mode set? • Are the speakers properly connected?	• Press the remote control's MUTE button. • Connect the speakers properly.
	• Is AUDIO INPUT set correctly?	• Set AUDIO INPUT on the OPTION menu correctly.
Poor picture with VIDEO signal input.	• Improper control setting. Local interference. Cable interconnections. Input impedance is not correct level.	• Adjust picture control as needed. Try another location for the monitor. Be sure all connections are secure.
Poor picture with RGB signal input.	• Improper control setting. Incorrect 15 PIN connector pin connections.	• Adjust picture controls as needed. Check pin assignments and connections.
Tint is poor or colors are weak.	• Are the tint and colors properly adjusted?	• Adjust the tint and color (under "PICTURE").
Nothing appears on screen.	• Is the computer's power turned on?	• Turn on the computer's power.
	• Is a source connected?	• Connect source to the monitor.
	• Is the power management function in the standby or off mode?	• Operate the computer (move the mouse, etc.).
Part of picture is cut off or picture is not centered.	• Is the position adjustment appropriate?	• Adjust the "SCREEN" properly.
Image is too large or too small.	• Is the screen size adjustment appropriate?	• Press the "WIDE" button on the remote control and adjust properly.
Picture is unstable.	• Is the computer's resolution setting appropriate?	• Set to the proper resolution.
POWER/STANDBY indicator is lighted in orange or red.	• Horizontal and / or vertical sync signal is not present when the Intelligent Power Manager control is on.	• Check the input signal.
POWER/STANDBY indicator is blinking in red.	• The temperature inside the main unit has become too high and has activated the protector.	• Promptly switch off the power of the main unit and wait until the internal temperature drops. See*1.
POWER/STANDBY indicator is blinking in green and red, or green.	———	• Prompty switch off the power of the main unit. See *2.

*1 Overheat protector
If the monitor becomes too hot, the overheat protector will be activated and the monitor will be turned off. If this happens, turn off the power to the monitor and unplug the power cord. If the room where the monitor is installed is particularly hot, move the monitor to a cooler location and wait for the monitor to cool for 60 minutes. If the problem persists, contact your NEC dealer for service.

*2 In the following case, power off the monitor immediately and contact your dealer or authorized NEC Service Center.
The monitor turns off 5 seconds after powering on and then the POWER/STANDBY indicator blinks. It indicates that the power supply circuit or plasma display panel or, one or more fans have been damaged.

TROUBLESHOOTING

TROUBLESHOOTING

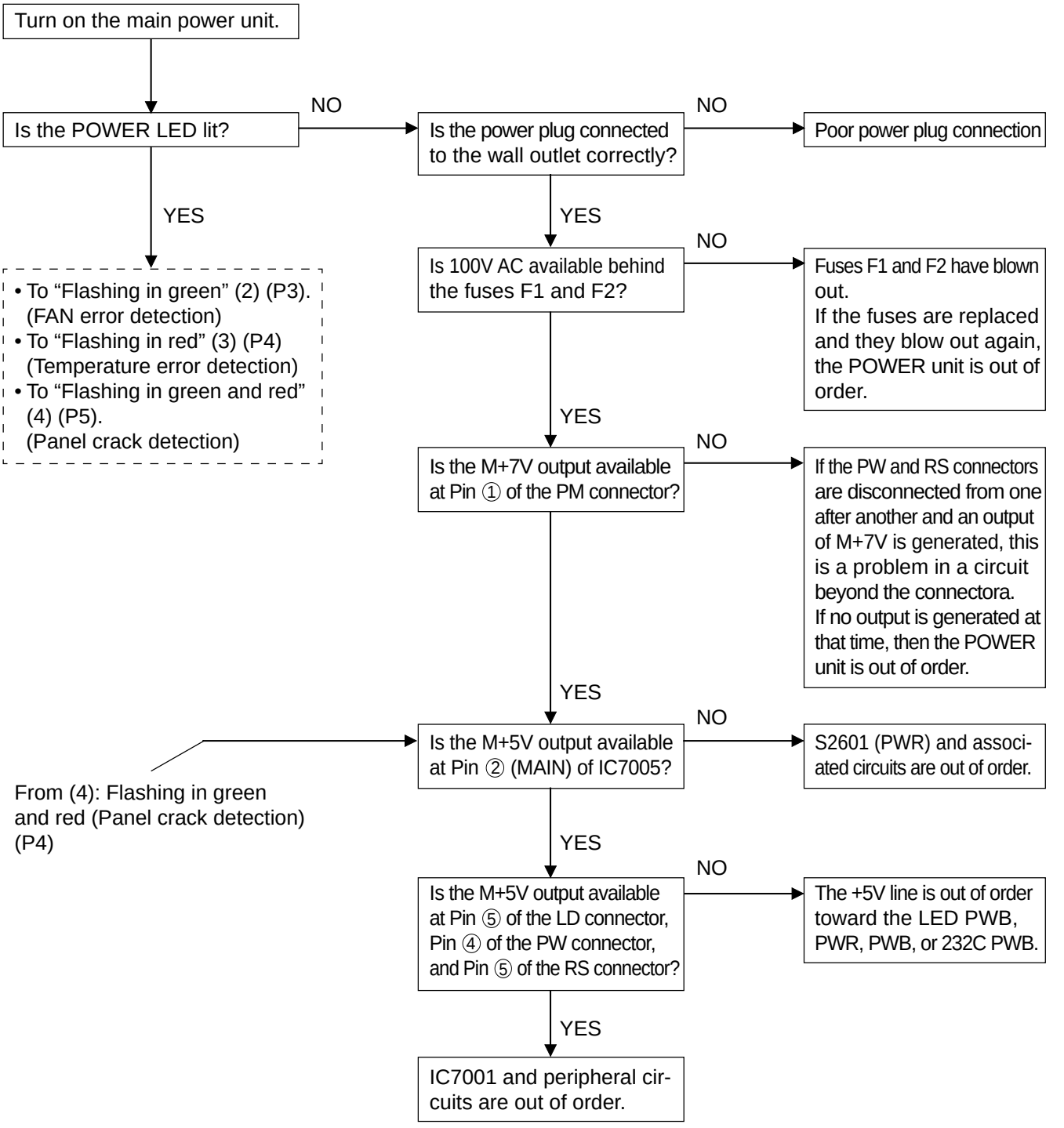
- In the case of abnormality in the POWER system, such as “No power available” or “Alarm (LED flashing)”
  Go to → **1. Power failure (P2)**

- In the case of abnormality in the VIDEO system, such as “No picture” or “Picture errors”
  Go to → **2. No picture displayed, picture errors (P6)**

- In the case of no audio output
  Go to → **3. No audio output generated (P15)**

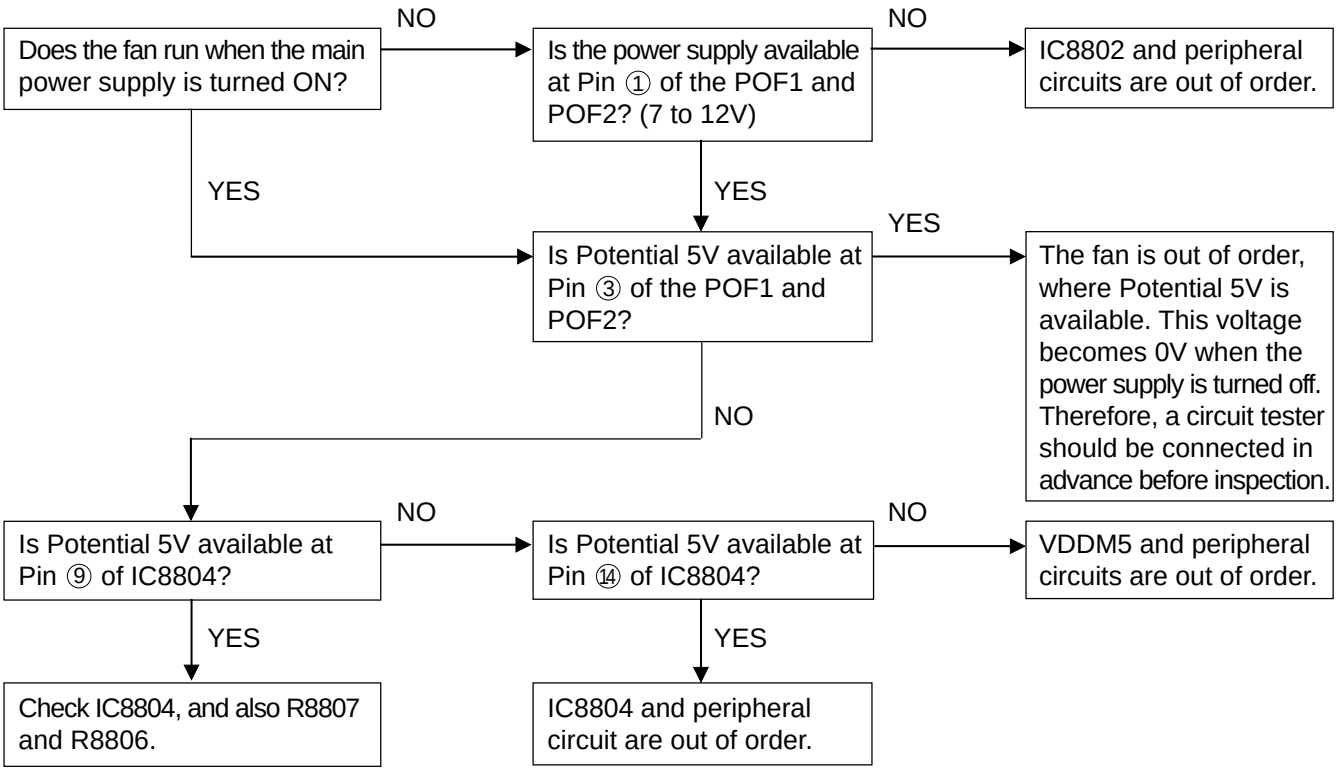
1. Power failure

(1) POWER is turned OFF.

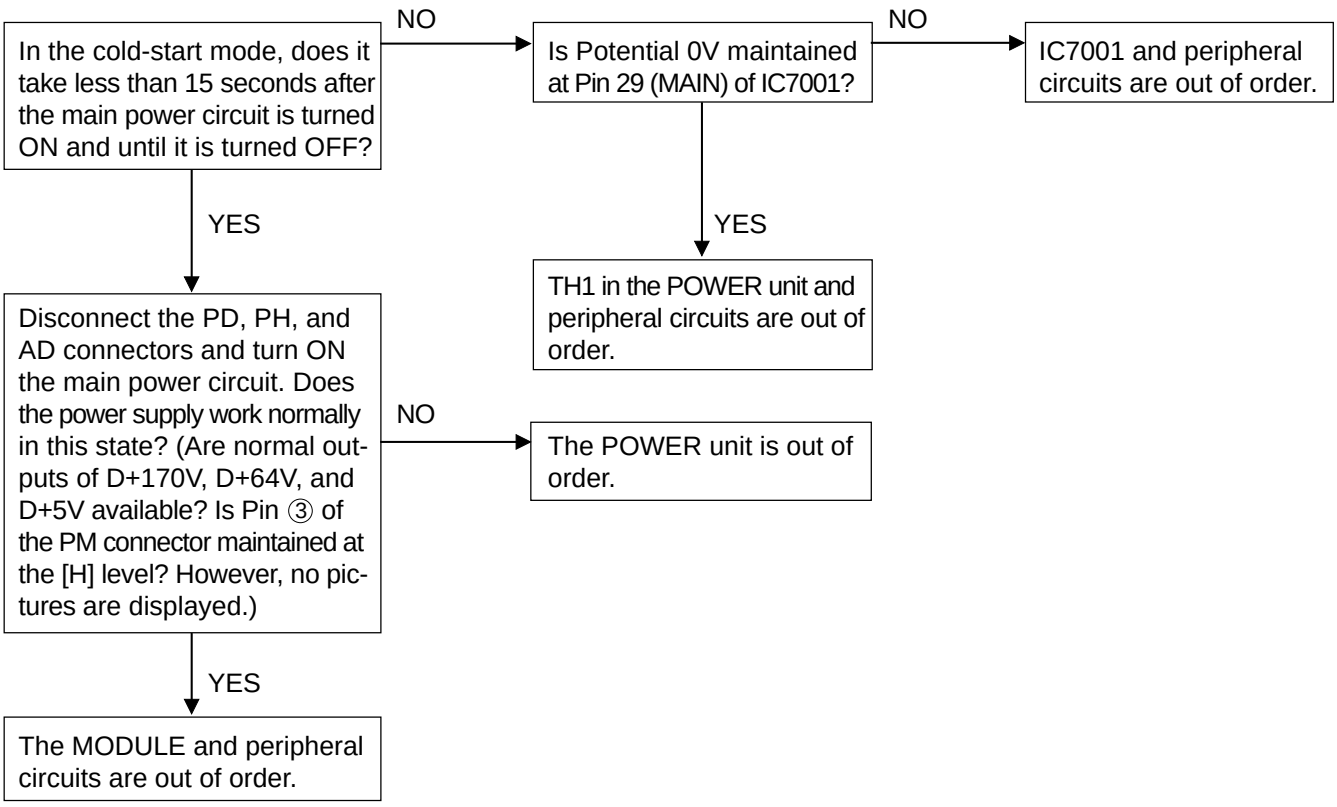

Turn on the main power unit.
Is the POWER LED lit?
NO
YES
Is the power plug connected to the wall outlet correctly?
NO
Poor power plug connection
YES
Is 100V AC available behind the fuses F1 and F2?
NO
Fuses F1 and F2 have blown out.
If the fuses are replaced and they blow out again, the POWER unit is out of order.
YES
Is the M+7V output available at Pin ① of the PM connector?
NO
If the PW and RS connectors are disconnected from one after another and an output of M+7V is generated, this is a problem in a circuit beyond the connectora.
If no output is generated at that time, then the POWER unit is out of order.
YES
• To “Flashing in green” (2) (P3). (FAN error detection)
• To “Flashing in red” (3) (P4) (Temperature error detection)
• To “Flashing in green and red” (4) (P5). (Panel crack detection)
From (4): Flashing in green and red (Panel crack detection) (P4)
Is the M+5V output available at Pin ② (MAIN) of IC7005?
NO
S2601 (PWR) and associated circuits are out of order.
YES
Is the M+5V output available at Pin ⑤ of the LD connector, Pin ④ of the PW connector, and Pin ⑤ of the RS connector?
NO
The +5V line is out of order toward the LED PWB, PWR, PWB, or 232C PWB.
YES
IC7001 and peripheral circuits are out of order.

(Caution) When the LED is flashing (protector in operation), all power lines other than M+7 are automatically turned off. When checking the power lines other than the M+7V system, a circuit tester or the like should be connected to the measuring point in advance, for confirmation.

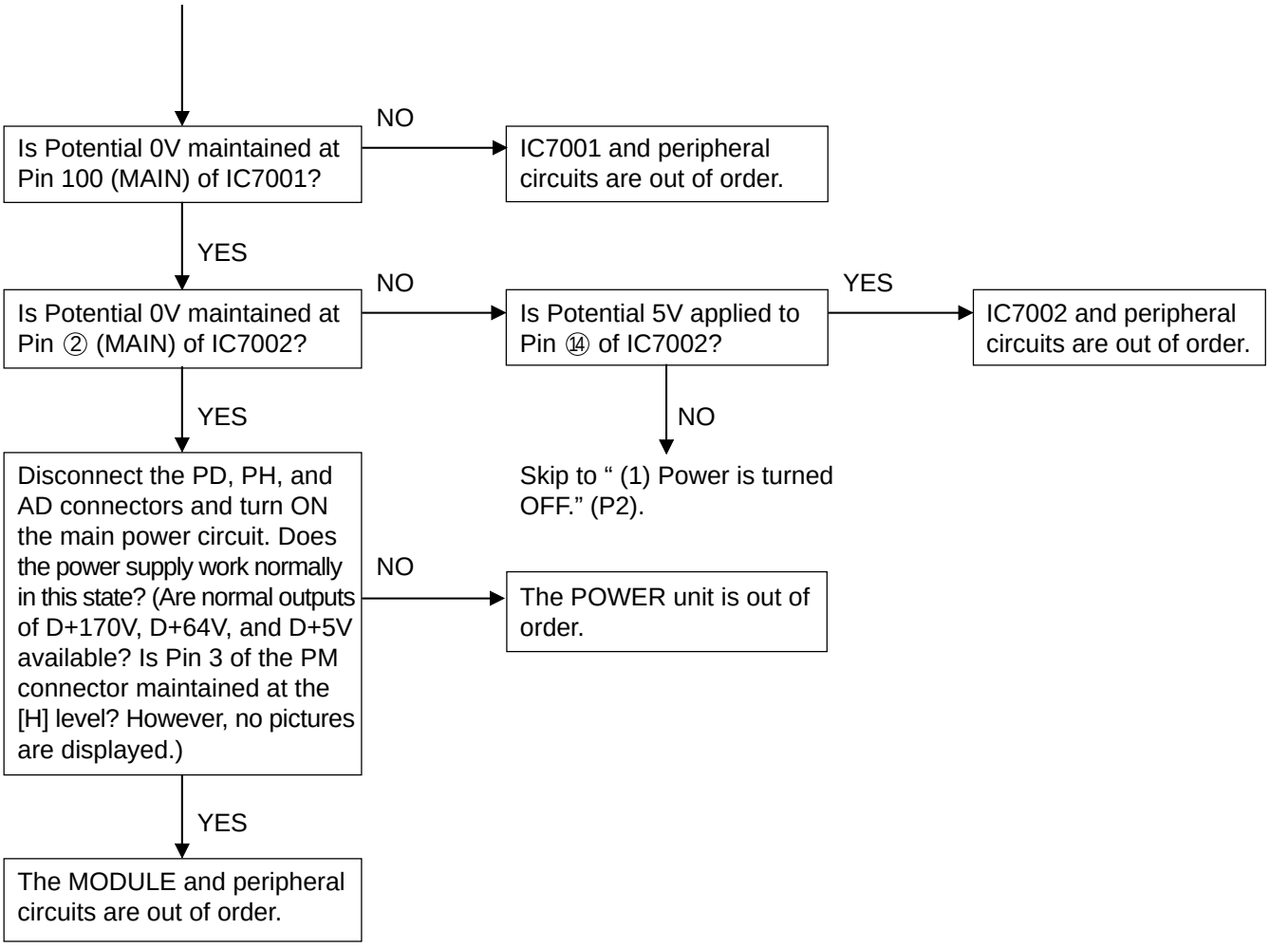
(2) Flashing in green (FAN error detection)


Does the fan run when the main power supply is turned ON?
NO
Is the power supply available at Pin ① of the POF1 and POF2? (7 to 12V)
NO
IC8802 and peripheral circuits are out of order.
YES
YES
Is Potential 5V available at Pin ③ of the POF1 and POF2?
YES
The fan is out of order, where Potential 5V is available. This voltage becomes 0V when the power supply is turned off. Therefore, a circuit tester should be connected in advance before inspection.
NO
Is Potential 5V available at Pin ⑨ of IC8804?
NO
Is Potential 5V available at Pin ⑭ of IC8804?
NO
VDDM5 and peripheral circuits are out of order.
YES
YES
Check IC8804, and also R8807 and R8806.
IC8804 and peripheral circuit are out of order.

(3) Flashing in red (Temperature error detection)


In the cold-start mode, does it take less than 15 seconds after the main power circuit is turned ON and until it is turned OFF?
NO
Is Potential 0V maintained at Pin 29 (MAIN) of IC7001?
NO
IC7001 and peripheral circuits are out of order.
YES
YES
TH1 in the POWER unit and peripheral circuits are out of order.
Disconnect the PD, PH, and AD connectors and turn ON the main power circuit. Does the power supply work normally in this state? (Are normal outputs of D+170V, D+64V, and D+5V available? Is Pin ③ of the PM connector maintained at the [H] level? However, no pictures are displayed.)
NO
The POWER unit is out of order.
YES
The MODULE and peripheral circuits are out of order.

(4) Flashing in green and red (Panel crack detection)


Is Potential 0V maintained at Pin 100 (MAIN) of IC7001?
NO
IC7001 and peripheral circuits are out of order.
YES
Is Potential 0V maintained at Pin ② (MAIN) of IC7002?
NO
Is Potential 5V applied to Pin ⑭ of IC7002?
YES
IC7002 and peripheral circuits are out of order.
YES
NO
Skip to " (1) Power is turned OFF." (P2).
Disconnect the PD, PH, and AD connectors and turn ON the main power circuit. Does the power supply work normally in this state? (Are normal outputs of D+170V, D+64V, and D+5V available? Is Pin 3 of the PM connector maintained at the [H] level? However, no pictures are displayed.)
NO
The POWER unit is out of order.
YES
The MODULE and peripheral circuits are out of order.

(Caution) How to cancel the alarm condition:

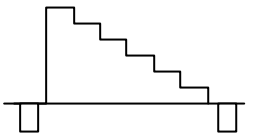
- While flashing in green and red occurs, the power supply cannot be reset by ON/OFF operation at the main power switch, remote control, and wall outlet.
- For alarm resetting, keep pressing the input selector key at the main unit of the set and move the mains power switch to [ON] at the main unit. In this state, it is necessary to keep pressing the input selector key of the main unit for more than 2 seconds.

2. No picture displayed and picture errors

(Caution) IPXXXX is installed in the MAIN PWB and the VIDEO PWB. These components are inserted in the power line. If there is any error occurring in the circuit, these components function to prevent the evolution of this problem to other areas. Accordingly, check whether the same voltage is generated at both ends of each component. (In normal state, the component is internally short-circuited.) If the same voltage is not generated, this means that the MAIN PWB is out of order. The same check is needed also for the DSP PWB.

(1) No picture display of the PC signal only or both the VIDEO and PC signals

Enter an input of XGA69H gray scale in the input circuit of PC1, and select PC INPUT 1.



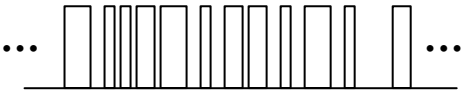
Is ON-screen display available?

NO → To “No presentation of pictures and ON-screen display” (P11)

YES

Is a signal of 3Vp-p available at at the signal input pins of IC8701 and IC8702? (Signale names: REV_ LVDS, RODD_LVDS, ets.)

YES → The MAIN PWB of the AD connector is out of order.

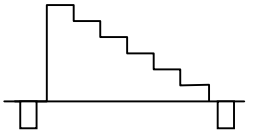


NO

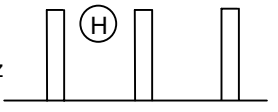
Is a signal of 0.7Vp-p available at Pins 1, 3, 5 of the PC connector and a sync signal of 5Vp-p available at Pins 7, 9, 10, 12?

YES → The MAIN PWB is out of order.

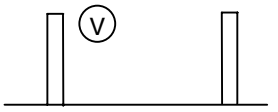
1, 3, 5



7, 10
45kHz



9, 12
60Hz

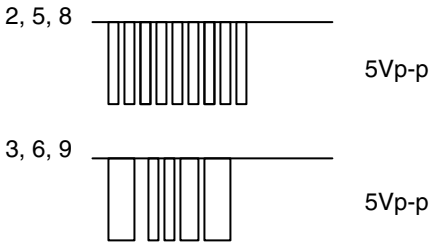


NO

(1)-1 (P7)

(1)-1 (P6)

Are the signals below available at Pins 2, 5, 8, 3, 6, and 9 of the BU connector?



YES

Are the specified voltages available at the PV connector?
Pin 1 14Vdc
Pin 3 5Vdc
Pin 5 6Vdc
Pin 7 7Vdc

YES

The VIDEO PWB is out of order.

NO

NO

Are the specified voltages available at the connectors below? (Power source check)

Connector name	Pin No.	Voltage
PN	1	3.3Vdc
PM	1	7Vdc
	7	5Vdc
	9	14Vdc

YES

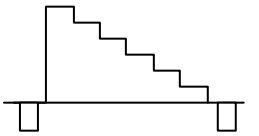
The MAIN PWB is out of order.

NO

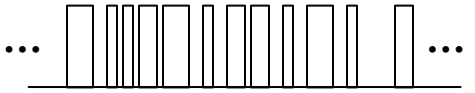
The POWER unit is out of order.

(2) No picture display of the VIDEO signal only

Enter an input of gray scale in the input circuit of VIDEO1, and select VIDEO1.



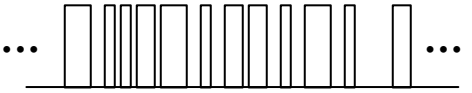
Is a signal of about 3Vp-p available at any of Pins 21 to 79 of the AM connector in the DSP PWB (GND terminal excluded)?



YES → The MAIN PWB is out of order.

NO

Is a signal of about 3Vp-p available at any of Pins 101 to 159 of the AM connector in the DSP PWB (GND terminal excluded)?



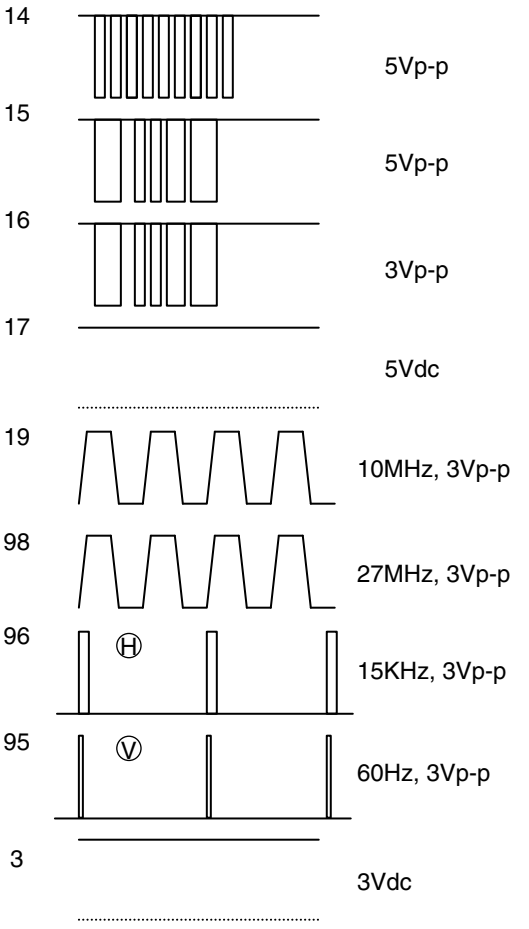
NO → The MAIN PWB is out of order.

YES

(2)-1 (P9)

(2)-1 (P8)

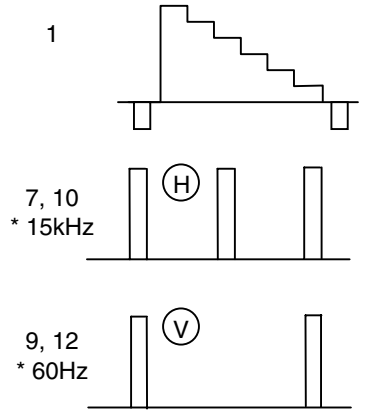
Are the signals below available at Pins 14 to 17, 19, 98, 96, 95, and Pin 3 (IP8001) of the AM connector in the DSP PWB?



YES → The DSP PWB is out of order.

NO

Is a signal of 1Vp-p available at Pin 1 of the YU connector, and a sync signal of 5Vp-p available at Pins 7, 9, 10, and 12?



YES → The MAIN PWB is out of order.

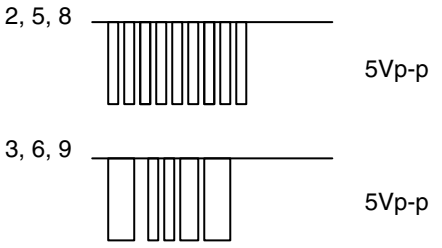
* In case of an NTSC input.

NO

(2)-2 (P10)

(2)-2 (P9)

Are the signals below available at Pins 2, 5, 8, 3, 6, and 9 of the BU connector?



YES

Are the specified voltages available at the PV connector?
Pin 1 14Vdc
Pin 3 5Vdc
Pin 5 6Vdc
Pin 7 7Vdc

YES

The VIDEO PWB is out of order.

NO

NO

Are the specified voltages available at the connectors below? (Power source check)

Connector name	Pin No.	Voltage
PN	1	3.3Vdc
PM	1	7Vdc
	7	5Vdc
	9	14Vdc

YES

The MAIN PWB is out of order.

NO

The POWER unit is out of order.

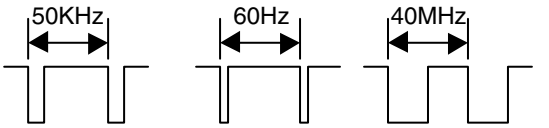
No presentation of pictures and ON-screen display (P6)

Are pulses of 3Vp-p available at Pins 38, 39, and 40 of the AD connector?

NO

YES

Are the horizontal/vertical sync signals of 3Vp-p available at Pins 27/28 of IC8701, and a clock signal at Pin 31?



NO

YES

Are the signals of 3Vp-p (signal name: REV_LVDS, RODD_LVDS, etc.) available at the signal input pin of IC8701?

NO

YES

Is normal display available when the AD, PD, or PH cable is replaced?

YES → Each cable is defective.

NO

Is normal display available when the MAIN PWB is replaced?

YES → The MAIN PWB is out of order.

NO

Are 170V, 64V, and D+5V of the POWER unit normally output?

NO → See “Power cannot be ON.”

YES

The plasma display module is out of order.

Are the specified voltages available at the connectors below? (Power source check)

YES → The MAIN PWB is out of order.

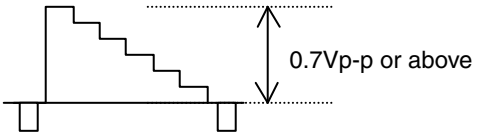
Connector name	Pin No.	Voltage
PN	1	3.3Vdc
PM	1	7Vdc
	7	5Vdc
	9	14Vdc

NO

The POWER unit is out of order.

(3) Picture errors

Display a picture in error mode. However, the video signal level shall be maintained above 0.7Vp-p.



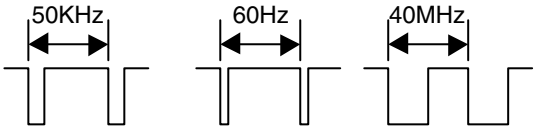
YES

Are pulses of 3Vp-p available at Pins 38, 39, and 40 of the AD connector?

NO

YES

Are the horizontal/vertical sync signals of 3Vp-p available at Pins 27/28 of IC8701, and a clock signal at Pin 31?



NO

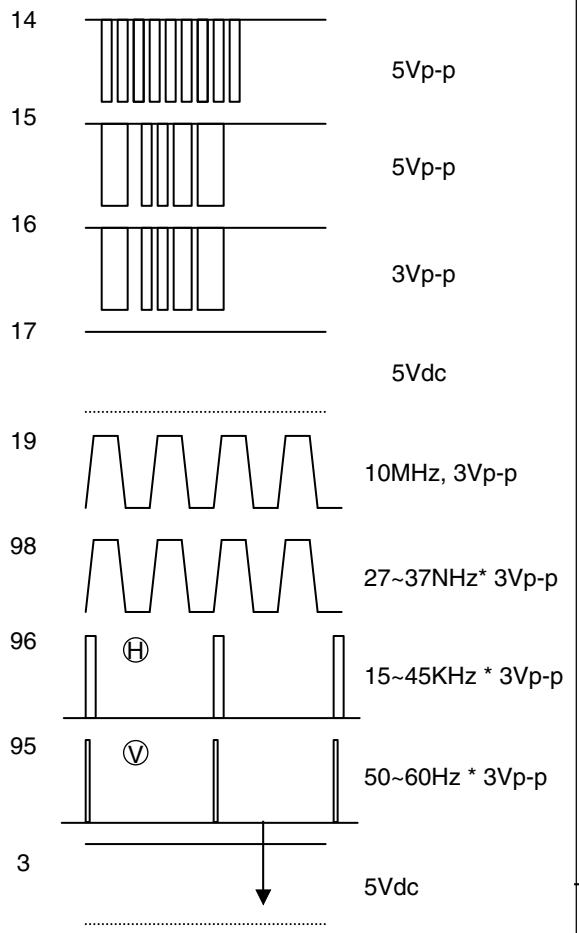
YES

Is a picture error caused by PC input?

YES

NO

Are the signals below available at Pins 14 to 17, 19, 98, 96, and 95 of the AM connector and at Pin 3 (IP8001) in the DSP PWB?



NO

Are the specified voltages available at the connectors below?
(Power source check)

Connector name	Pin No.	Voltage
PN	1	3.3Vdc
PM	1	7Vdc
	7	5Vdc
	9	14Vdc

YES

The MAIN PWB is out of order.

NO

The POWER unit is out of order.

* Changed according to the input signal.

YES

(3)-1 (P13)

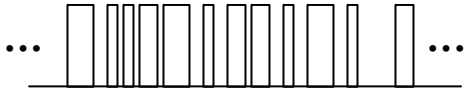
(3)-1 (P12)

Does this phenomenon correspond to “Specific gradations (brightness) are tinted.”?

NO

YES

Are the signals of 3Vp-p (signal name: REV_ LVDS, RODD_LVDS, etc.) available at all the signal input pin of IC8701 and IC8702?

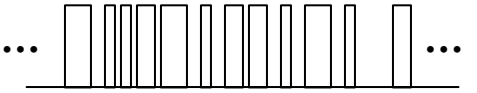


YES

(3)-2 (P14)

NO

Is a signal of about 3Vp-p available at all Pins 21 to 79 of the AM connector (GND terminals excluded) in the DSP PWB?

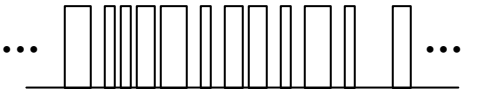


YES

The MAIN PWB is out of order.

NO

Is a signal of about 3Vp-p available at all Pins 101 to 159 of the AM connector (GND terminal excluded) in the DSP PWB?



YES

The DSP PWB is out of order.

NO

Are the specified voltages available at the connectors below? (Power source check)

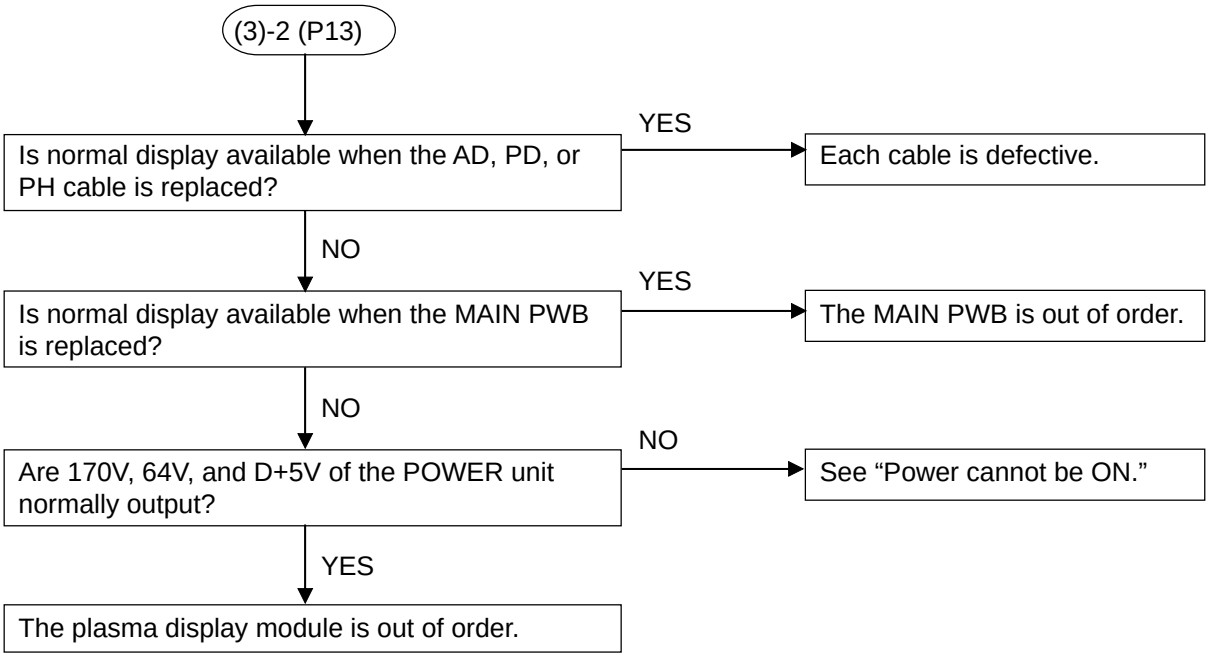
Connector name	Pin No.	Voltage
PN	1	3.3Vdc
PM	1	7Vdc
	7	5Vdc
	9	14Vdc

YES

The MAIN PWB is out of order.

NO

The POWER unit is out of order.


(3)-2 (P13)
Is normal display available when the AD, PD, or PH cable is replaced?
YES
Each cable is defective.
NO
Is normal display available when the MAIN PWB is replaced?
YES
The MAIN PWB is out of order.
NO
Are 170V, 64V, and D+5V of the POWER unit normally output?
NO
See “Power cannot be ON.”
YES
The plasma display module is out of order.

3. No audio output generated

Note) This model is enabled to set up an audio input terminal for each video input terminal. No audio output is available unless the input terminal of the displayed pictures (example: VIDEO 1) coincides with that of audio (example: RGB 3). Therefore, analysis for troubleshooting should be carried out after the displayed video input terminal (example: VIDEO 1) has been made to coincide with the audio input terminal according to the instruction manual.

Enter a signal input in AUDIO IN.

↓

Is the audio signal present at the speaker OUT? → YES → Speaker or cable is defective.

↓ NO

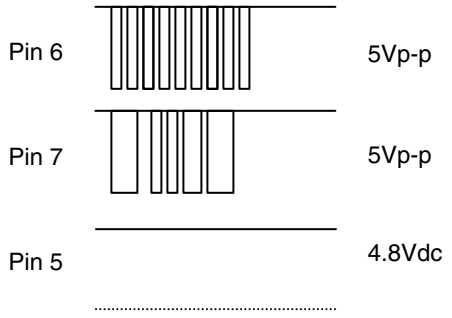
Are the voltages specified below available at the PA connector of the AUDIO unit? → YES → The POWER unit or the cable is out of order.
(Power source check)

Pin	Signal name	Voltage
1	S+24	+23.5~33Vdc
2	S+24	+23.5~33Vdc
3	S.GND	GND
4	S.GND	GND
5	A+13	+13Vdc
6	A.GND	GND

(Note) When confirming the source voltage by disconnecting the PA connector, short-circuit the section between Pins ③ ④ of the PA connector and Pin ⑥ (like short-circuiting between S.GND of the POWER unit), and then turn on the POWER unit.

↓ YES

Are the following waveforms observed at the AU connector of the AUDIO unit? → NO → The MAIN PWB or the cable is out of order.



Pin 1, 2 : Audio signal waveforms

↓ YES

The AUDIO unit is out of order.

METHOD OF ADJUSTMENTS

Adjusting conditions

Adjustments should be carried out in accordance with the procedures described below. However, any adjustments other than the items A to C below are not required.

A. When the [PDP module] is replaced, adjust the sections according to the adjusting items [1 to 3] specified below.

(Caution) When the PDP module has been replaced, clear the USAGE TIME to “0” without fail, according to “how to clear the usage time” shown below.

B. When the [POWER unit] is replaced, adjust the sections according to the adjusting items [1 to 3] specified below.
C. When the [MAIN PWB] is replaced, adjust the sections according to the adjusting item [4 and 5] specified below.

* **How to clear the integrated time**
Assume the folloing factory mode by the use of the remote control. Press [PROCEED] key six times to get the screen of [USAGE TIME]. In this state, the integrated time up to the present time is displayed.
The integrated time is cleared to [0] when the remote control keys are pressed in the order of [MUTE] → corsor keys [Λ]→ corsor keys [V] → [OFF TIMER].

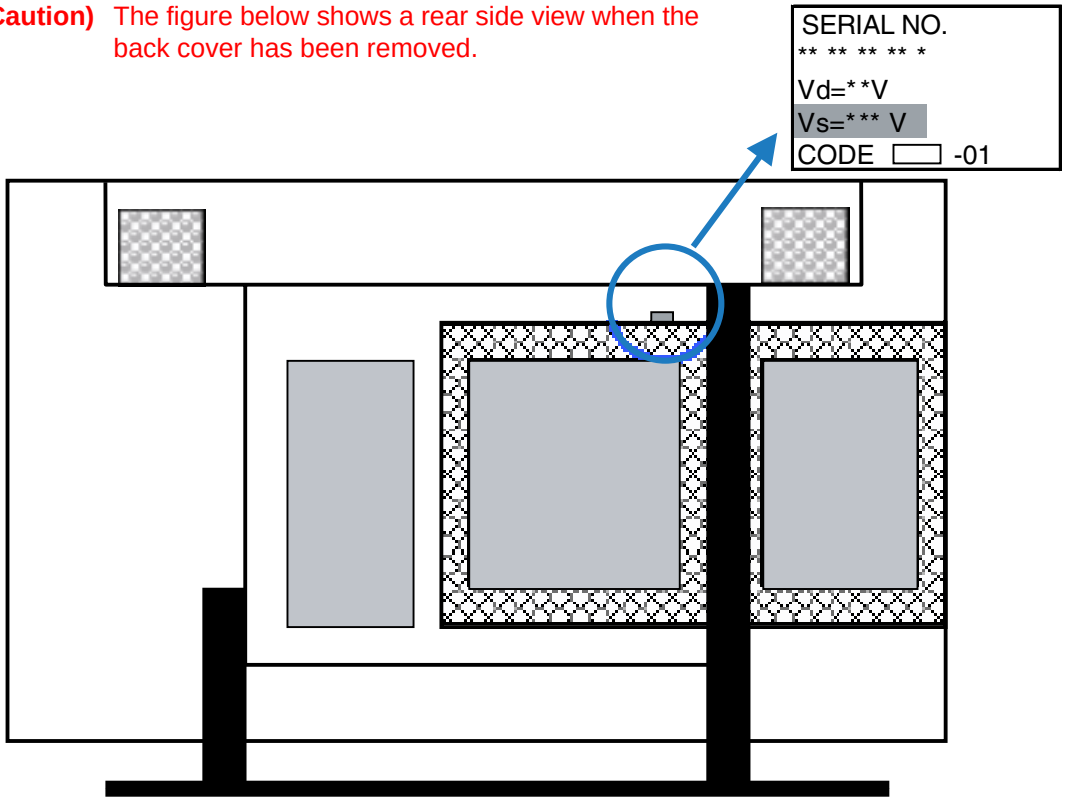
* How to enter or withdraw from the factory setting mode:
Press the keys in the sequential order of [OFF TIMER] → [EXIT] → [MUTE] → [OFF TIMER].

When a conventional remote control is used:
Press the keys in the sequential order of [OFF TIMER] → [OK] → [MUTE] → [OFF TIMER].
At that time, use the [MENU] key in place of the [PROCEED] key.

1. Adjustment of +170V

(1) Using any video signal of VIDEO input, DVD/HD input, or RGB input, and display a color bar signal. Turn on the power switch of the main unit.
(2) Turn the volume control (RV3) in the [D+170V ADJ] section of the power unit, and adjust the voltage value between TP3 (D+170V output) and TP2 (D.GND) of the power unit so that this voltage settles within the range of “specified voltage of the PDP module (Value Vs on the label shown below) ± 1V.”

(Caution) The figure below shows a rear side view when the back cover has been removed.



2. Adjustment of +64V

(1) Using any video signal of VIDEO input, DVD/HD input, or RGB input, and display a color bar signal. Turn on the power switch of the main unit.

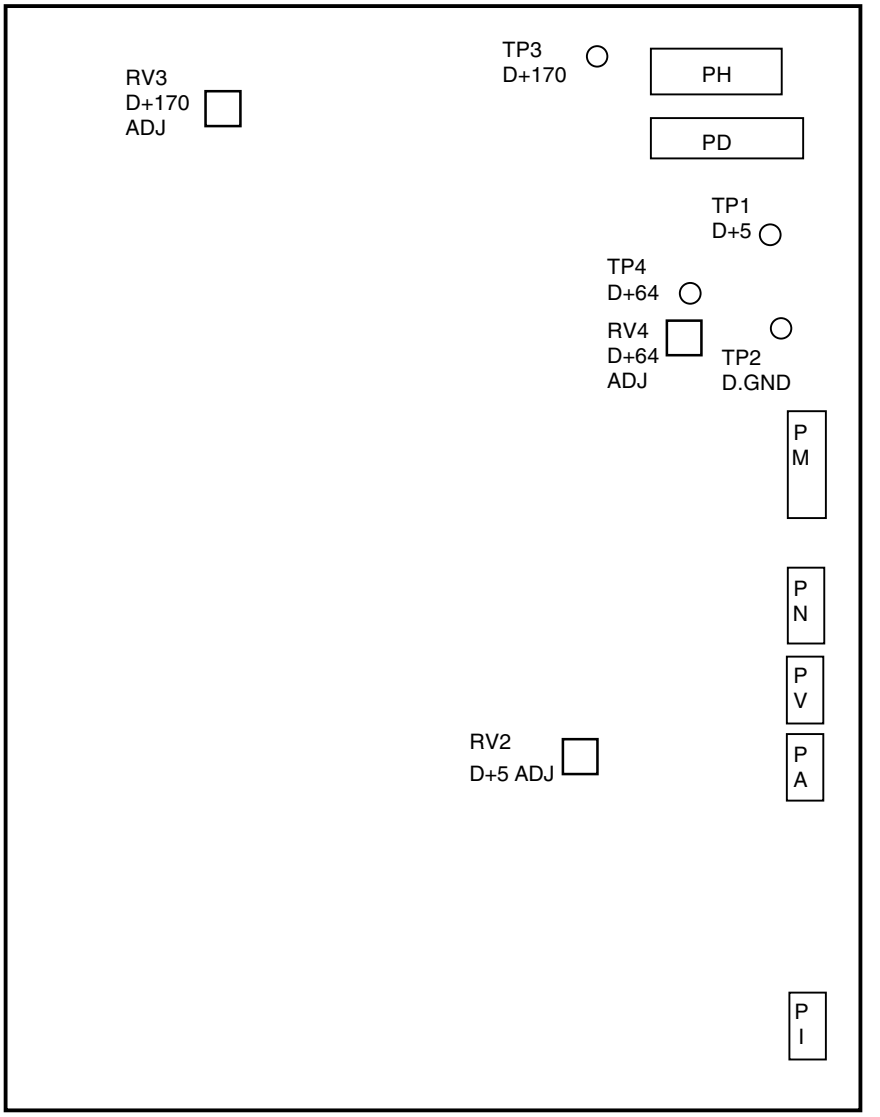
(2) Confirm that the voltage at TP4 (D+60V output) and TP2 (D.GND) of the power unit is maintained at a voltage value (Vd value of the label described in Item 1 above) within ± 1V, specified for the PDP module.
If the voltage specified above cannot be secured, turn the volume control (RV4) in the [D+64V ADJ] block and adjust the voltage until it attains "the voltage specified for the PDP module (Value Vd on the label of the above-mentioned Item 1) ± 1V."

3. Adjustment of +5V

(1) Use any video signal of VIDEO input, DVD/HD input, or RGB input, and display a color bar signal.

(2) Confirm that the voltage value between TP1 (+5V output) and TP2 (D.GND) of the power unit is maintained at "5.10 ± 0.1V."
If the voltage specified above cannot be secured, turn the volume control (RV2) in the [D+5V ADJ] block and adjust the voltage until it attains "5.10 ± 0.1V."

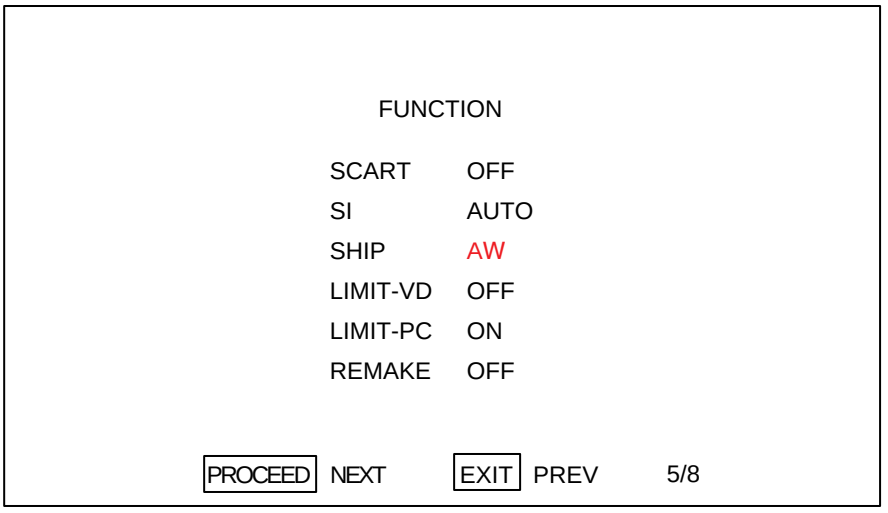
* POWER unit layout



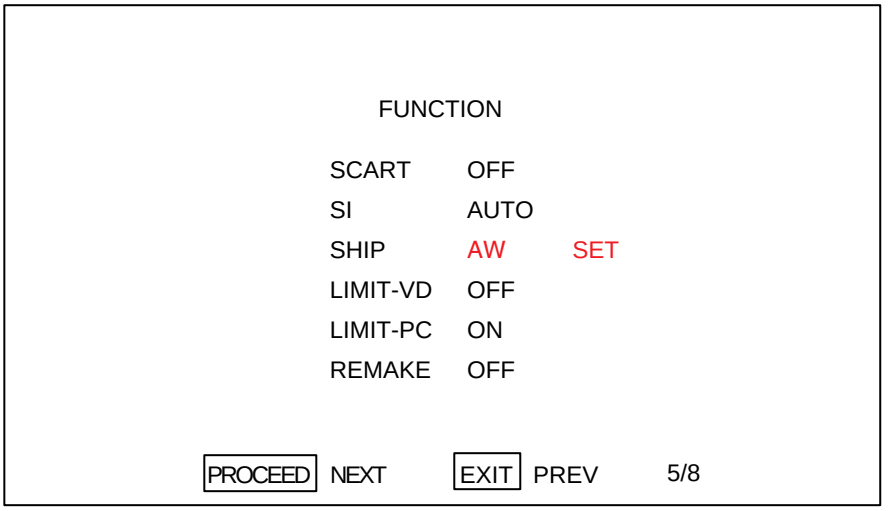
4. Initial setting

(1) Enter the factory setting mode by means of the remote control.
(2) Press the [PROCEED] key of the remote control 4 times to obtain the [FUNCTION] menu.
(3) Move the cursor to the [SHIP] item by means of the cursor keys [Λ] and [V], and select the adequate alphabets of the destination specified below, using the cursor keys [<] and [>].

JW : Specifications for Japan
AW : Specifications for North America
GW : Specifications for Europe



(4) Press the [MUTE] key → the cursor key [Λ] → the cursor key [V] → the [OFF TIMER] key in this order to make factory setting.
When factory setting is executed, red characters of [SET] are displayed for about 7 seconds at the right of the [destination alphabets]. When the red characters of [SET] go out, this is a sign that the setting has been finished.



(5) Withdraw from the factory setting mode by means of the remote control.

[Initial setting values]

(User setting values)

Mode	J, JW	Other than J, JW
Remote control standby	ON condition	ON condition
Sound volume	10 steps	10 steps
Input mode	VIDEO1	VIDEO1
Display mode	STADIUM	STADIUM
AUTO picture	OFF (All of RGB1 to 3)	OFF (All of RGB1 to 3)
HD select	1080B	1080B
Language	Japanese	English
Color system	AUTO1	AUTO1

(Factory setting values)

Mode		J, JW	A, AW	G, GW
MXT		601	709	709
SUS		ORG	ORG	ORG
FUNCTION	SCART	OFF	OFF	ON
	SI	AUTO	AUTO	AUTO
	LIMIT-VD	OFF	OFF	OFF
	LIMIT-PC	ON	ON	ON
	REMAKE	OFF	OFF	OFF
USAGE TIME		00000H	00000H	00000H
FAN SET	FPIC	ON	ON	ON
	STF TEMP 1 2	25	25	25
	STF TEMP2 3	50	50	50
	STF TEMP3 4	55	55	55
	STF IME	30	30	30
	—	—	—	—
	—	—	—	—
	—	—	—	—
	—	—	—	—

5. Adjustment of VIDEO screen position and phase

5-1. Adjustment of VIDEO screen position

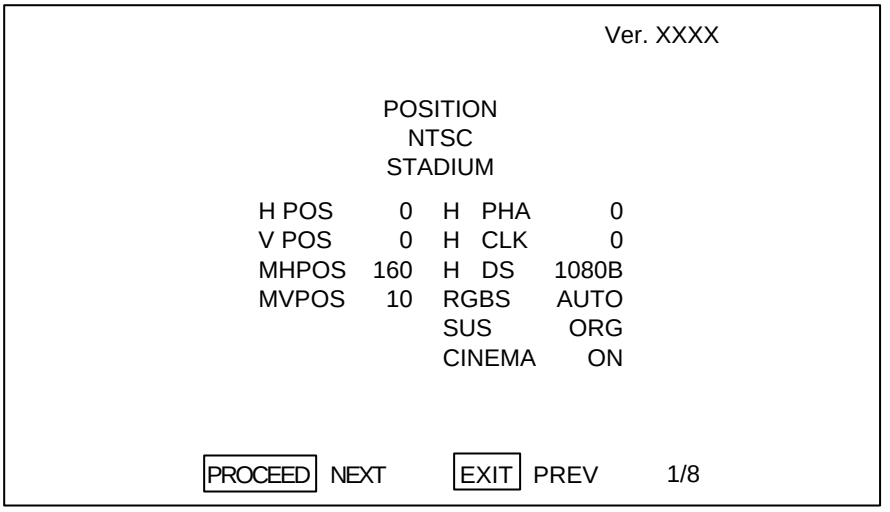
(Caution) Adjustments should be started after returning the [VIDEO] and [SCREEN] setting of the main menu to the initial setting conditions.

(1) Enter an input of NTSC and PAL monoscopic signals in VIDEO 1 and use the [WIDE] key of the remote control to change over the screen size in the sequential order of [STADIUM → ZOOM → NORMAL→ FULL]. Confirm in each screen that the screen position is uniformly arranged to the top, bottom, right, and left. If the screen position is found to be unevenly arranged, make adjustments according to the "method of screen position adjustment" shown below.

(2) Enter an input of PAL monoscopic signal in VIDEO 1 and use the [PROCEED] key of the remote control to select [Information] of the main menu. Change over the [color (COLOR SYSTEM)] to [SECAM]. In addition, change over the screen size in the sequential order of [STADIUM → ZOOM → NORMAL → FULL]. Confirm in each screen that the screen position is uniformly arranged to the top, bottom, right, and left. If the screen position is found to be unevenly arranged, make adjustments according to the "method of screen position adjustment" shown below.

[Method of screen position adjustment]

(1) Enter the factory setting mode by means of the remote control.
(2) In the [POSITION] screen ([POSITION] mode for initial setting), make the following setting:

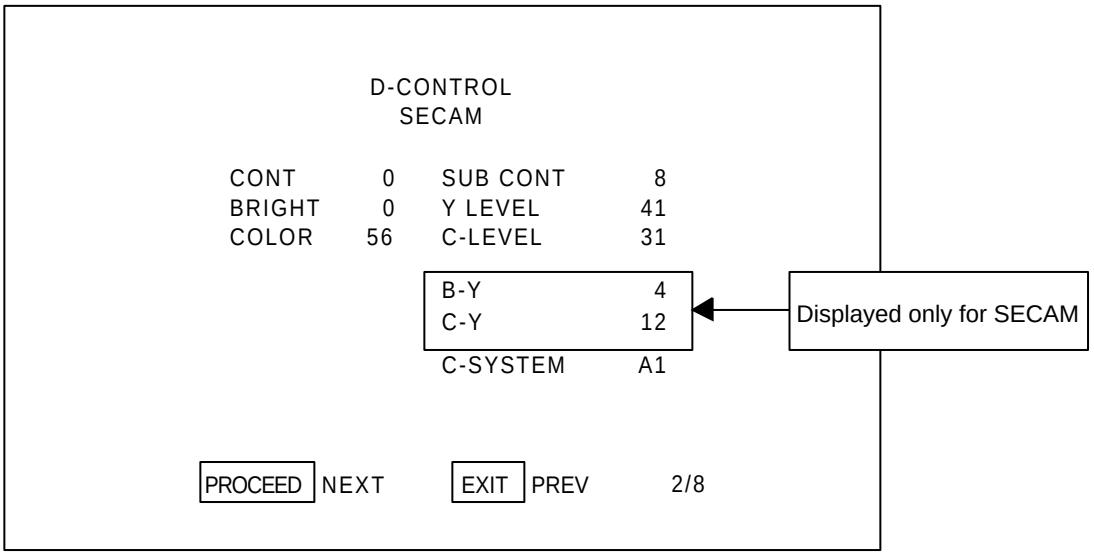


MHPOS : Adjustment of horizontal display range for the display in the PDP module.
MVPOS : Adjustment of vertical raster display range for the display in the PDP module.
H POS : Adjustment of horizontal signal position in the display range.
V POS : Adjustment of vertical signal position in the display range.

(3) Press the WIDE key of the remote control in order to select the NORMAL mode.
(4) When the display range of the PDP module is displaced, press the cursor keys [Λ] and [V] of the remote control to select [MHPOS] and [MVPOS], and make adjustments by pressing the cursor keys [<] and [>].
(5) Press the cursor keys [Λ] and [V] to select [H POS].
(6) Press the cursor keys [<] and [>] to adjust the screen position so that the screen can be arranged evenly to the right and left.
(7) Press the cursor keys [Λ] and [V] to select [V POS].
(8) Press the cursor keys [<] and [>] to adjust the screen position so that the screen can be arranged evenly to the top and bottom.
Confirm that [H PHA] is 0. Otherwise, adjust it to 0 by pressing the cursor keys [<] and [>].
(10) Confirm that [H CLK] is 0. Otherwise, adjust it to 0 by pressing the cursor keys [<] and [>].

(11) In the same manner, press the WIDE key and select [NORMAL → FULL → STADIUM → ZOOM → U-SCAN] in this order. Adjust the screen position so that the screen can be arranged evenly to the top, bottom, right, and left. Confirm that [H PHA] and [H CLK] are 0. Otherwise, press the cursor keys [<] and [>] to adjust them to 0.

(12) This should be done only if SECAM is adjusted as per (2) above.
Press the [PROCEED] key to display the D-CONTROL menu and adjust the cursor to C-SYSTEM by means of the cursor keys [Λ] and [V]. Select [A1] by means of the cursor keys [<] and [>].



(13) Withdraw the factory setting mode.

5-2. Adjustment of DVD/HD screen position

(Caution) Adjustments should be started after returning the [VIDEO] and [SCREEN] setting of the main menu to the initial setting conditions.

(1) Enter an input of HDTV monoscopic signal in the DVD/HD1 IN terminal. Use the [PROCEED] key of the remote control to select [HD SELECT] of [OPTION] of the main menu. Make setting at [1035i] by pressing the cursor keys [<] and [>].

(2) Select [HD IN] with the remote control or the main-unit front key. Confirm that the screen position is uniformly arranged to the top, bottom, right, and left. If the screen position is found to be unevenly arranged, make adjustments according to the “method of screen position adjustment” shown below. (The screen size is FULL only.)

(3) Select the NTSC COMPONENT signal (480i) for the input video signal and change over the screen size in the sequential order of [STADIUM → ZOOM → NORMAL → FULL]. Confirm in each screen that the screen position is uniformly arranged to the top, bottom, right, and left. If the screen position is found to be unevenly arranged, make adjustments according to the “method of screen position adjustment” shown below.

(4) Select the PAL COMPONENT signal (5760i) for the input video signal and change over the screen size in the sequential order of [STADIUM → ZOOM → NORMAL → FULL]. Confirm in each screen that the screen position is uniformly arranged to the top, bottom, right, and left. If the screen position is found to be unevenly arranged, make adjustments according to the “method of screen position adjustment” shown below.

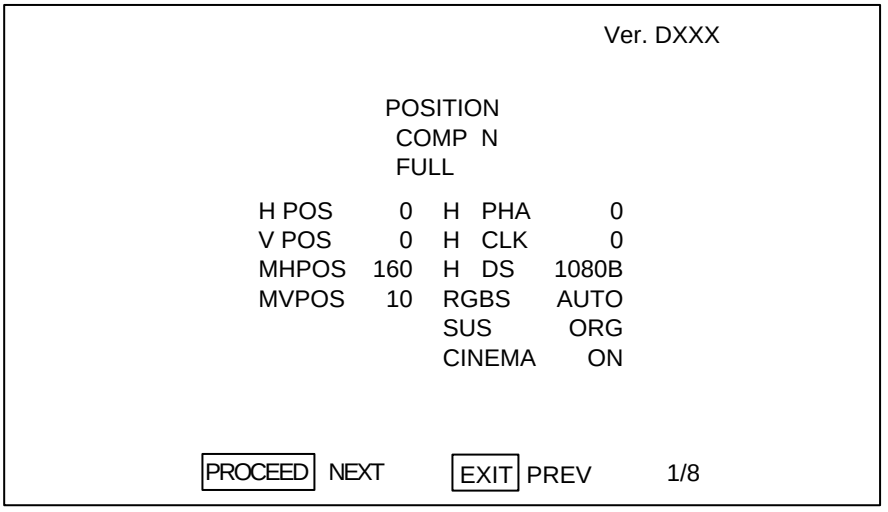
(5) Select the DTC 1080i signal for the input video signal. Select [HD SELECT] of the screen. Make setting at [1035B] by pressing the cursor keys [<] and [>]. Confirm that the screen position is uniformly arranged to the top, bottom, right, and left.
If the screen position is found to be unevenly arranged, make adjustments according to the “method of screen position adjustment” shown below. (The screen size is FULL only.)

(6) Select the DTV 720P signal for the input video signal. Confirm that the screen position is uniformly arranged to the top, bottom, right, and left.
If the screen position is found to be unevenly arranged, make adjustments according to the “method of screen position adjustment” shown below. (The screen size is FULL only.)

(7) Select the DTV 480P signal for the input video signal and change over the screen size in the sequential order of [STADIUM → ZOOM → NORMAL → FULL]. Confirm in each screen that the screen position is uniformly arranged to the top, bottom, right, and left. If the screen position is found to be unevenly arranged, make adjustments according to the “method of screen position adjustment” shown below.

[Method of screen position adjustment]

(1) Enter the factory setting mode by means of the remote control.
(2) In the [POSITION] screen ([POSITION] mode for initial setting), make the following setting:



(3) Press the WIDE key of the remote control in order to select the NORMAL mode.
(4) When the display range of the PDP module is displaced, press the cursor keys [Λ] and [V] of the remote control to select [MHPOS] and [MVPOS], and make adjustments by pressing the cursor keys [<] and [>].
(5) Press the cursor keys [Λ] and [V] to select [H POS].
(6) Press the cursor keys [<] and [>] to adjust the screen position so that the screen can be arranged evenly to the right and left.
(7) Press the cursor keys [Λ] and [V] to select [V POS].
(8) Press the cursor keys [<] and [>] to adjust the screen position so that the screen can be arranged evenly to the top and bottom.
(9) Confirm that [H PHA] is 0. Otherwise, adjust it to 0 by pressing the cursor keys [<] and [>].
(10) Confirm that [H CLK] is 0. Otherwise, adjust it to 0 by pressing the cursor keys [<] and [>].
(11) In the same manner, press the [WIDE] key to select the screen mode. (According to the signal type, the screen mode varies as shown below.) In each case, make adjustments so that the screen position is uniformly arranged to the top, bottom, right, and left. Confirm that both [H PHA] and [H CLK] are set at 0. Otherwise, press the cursor keys [<] and [>] in order to adjust both to zero.
- 480 i, 576 i, 480P, 576P [NORMAL → FULL → STANDIUM → ZOOM → U-SCAN]
- 1080 i, 1035 i, 720P [FULL → U-SCAN]

(12) Withdraw the factory setting mode.

[Morgue]

1. Signal Generator

(1) Digital RGB and component signal generator
- Equivalent to the Video Generator LT1615 (made by LEADER)
- Equivalent to the Panel Adapter LT9217 (made by LEADER)
- Equivalent to the Video Encoder LT1606 (made by LEADER)

(2) NTSC signal generator
- Equivalent to the NTSC Pattern Generator LCG-403YC (made by LEADER)

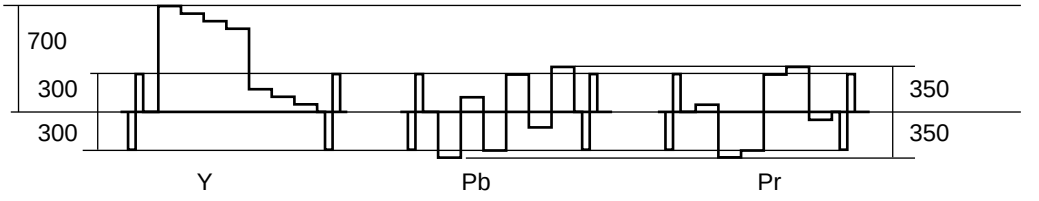
(3) PAL signal generator
- Equivalent to the Color Bar Pattern Generator PM5518 (made by PHILIPS)

2. VIDEO input

Input: Composite video input or S-terminal input for one system

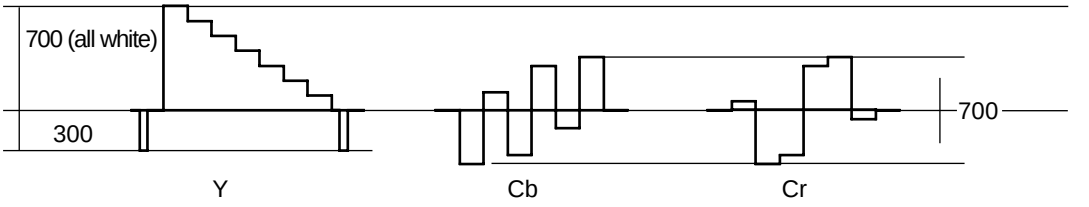
3. DVD/HD/DTV input

3-1. HD: Y/Pb/Pr component input, tri-sync signal



100% color bar signal (mVp-p)

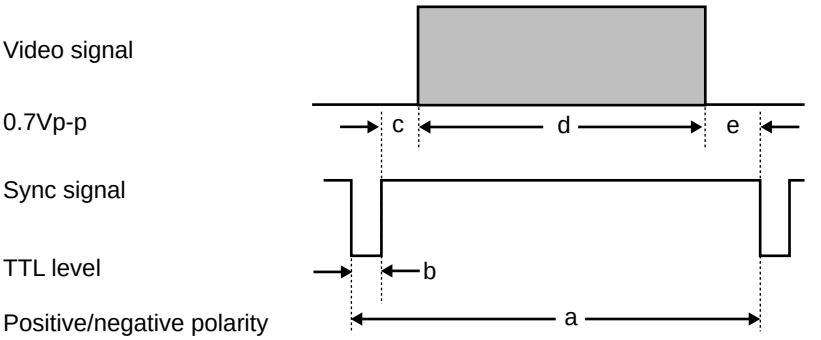
3-2. DVD: Y/B-Y/R-Y component input



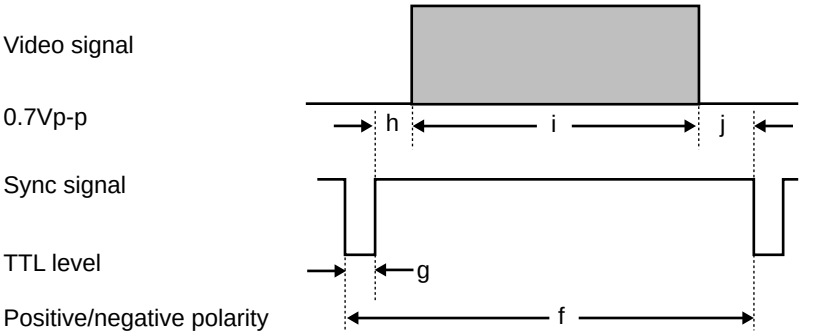
75% color bar signal (mVp-p)

4. RGB/PC input

1) Horizontal sync period



(2) Vertical sync period



* The data a to j above are specified in the next page and thereafter, classified for various inspection signals.

5. RGB/PC signal timing table

PC mode	1	2	3	4	5
Signal name	VU-6010 NTSC	VU-6010 PAL/SECAM	PC98 400@56Hz	IBM 400@70Hz	PC98 480@60HZ
Definition	640*240	768*288	640*400	640*400	640*480
Dot clock frequency (MHz)	12.214	14.752	21.053	25.175	25.175
H frequency (kHz)	15.734	15.557	24.826	31.469	31.469
V frequency (Hz)	59.94	50.39	56.423	70.086	59.94
H total (uS)	63.534	64.262	40.285	31.778	31.778
(dots)	776	948	848	800	800
H display period (uS)	52.4	52.06	30.4	25.422	25.422
(dots)	640	768	640	640	640
H front porch (uS)	1.146	1.288	2.803	0.675	0.596
(dots)	14	19	59	17	15
H sync pulse width (uS)	8.76	8.677	3.04	2.542	3.813
(dots)	107	128	64	64	96
H back porch (uS)	1.228	2.237	4.037	3.138	1.946
(dots)	15	33	85	79	49
V total (mS)	16.652	20.055	17.723	14.268	16.683
(line)	262	312	440	449	525
V display period (mS)	15.3	18.513	16.112	12.711	15.253
(line)	240	288	400	400	480
V front porch (mS)	0.191	0.321	0.282	0.413	0.191
(line)	3	5	7	13	6
V sync pulse width (mS)	1.144	1.093	0.322	0.064	0.064
(line)	18	17	8	2	2
V back porch (mS)	0.064	0.064	1.007	1.08	1.176
(line)	1	1	25	34	37
H sync polarity	Neg	Neg	Neg	Neg	Neg
V sync polarity	Neg	Neg	Neg	Neg	Neg
Scan type	Interlaced	Interlaced	Non Interlaced	Non Interlaced	Non Interlaced

PC mode	6	7	8	9	10
Signal name	MAC@13”	VESA 480@72Hz	VESA 480@75Hz	VESA 480@85Hz	XGA-2 480@75HZ
Definition	640*480	640*480	640*480	640*480	640*480
Dot clock frequency (MHz)	30.24	31.5	31.5	36.0	31.5
H frequency (kHz)	35	37.861	37.5	43.269	39.375
V frequency (Hz)	66.667	72.809	75	85.008	75
H total (uS)	28.571	26.413	26.667	23.111	25.4
(dots)	864	832	840	832	800
H display period (uS)	21.164	20.317	20.317	17.778	20.32
(dots)	640	640	640	640	640
H front porch (uS)	2.116	0.762	0.508	1.556	0.508
(dots)	64	24	16	56	16
H sync pulse width (uS)	2.116	1.27	2.032	1.556	3.048
(dots)	64	40	64	56	96
H back porch (uS)	3.175	4.064	3.81	2.222	1.524
(dots)	96	128	120	80	48
V total (mS)	15	13.735	13.333	11.764	13.333
(line)	525	520	500	509	525
V display period (mS)	13.714	12.678	12.8	11.093	12.19
(line)	480	480	480	480	480
V front porch (mS)	0.086	0.237	0.027	0.023	0.279
(line)	3	9	1	1	11
V sync pulse width (mS)	0.086	0.079	0.08	0.069	0.051
(line)	3	3	3	3	2
V back porch (mS)	1.114	0.739	0.427	0.578	0.813
(line)	39	28	16	25	32
H sync polarity	Sync on G	Neg	Neg	Neg	Neg
V sync polarity	Sync on G	Neg	Neg	Neg	Neg
Scan type	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced

PC mode	11	12	13	14	15
Signal name	VESA 600@56Hz	VESA 600@60Hz	VESA 600@72Hz	VESA 600@75Hz	VESA 600@85Hz
Definition	800*600	800*600	800*600	800*600	800*600
Dot clock frequency (MHz)	36	40	50	49.5	56.25
H frequency (kHz)	35.156	37.879	48.077	46.875	53.674
V frequency (Hz)	56.25	60.317	72.188	75	85.061
H total (uS)	28.444	26.4	20.8	21.333	18.631
(dots)	1024	1056	1040	1056	1048
H display period (uS)	22.222	20	16	16.162	14.222
(dots)	800	800	800	800	800
H front porch (uS)	0.667	1	1.12	0.323	0.569
(dots)	24	40	56	16	32
H sync pulse width (uS)	2	3.2	2.4	1.616	1.138
(dots)	72	128	120	80	64
H back porch (uS)	3.556	2.2	1.28	3.232	2.702
(dots)	128	88	64	160	152
V total (mS)	17.778	16.579	13.853	13.333	11.756
(line)	625	628	666	625	631
V display period (mS)	17.067	15.84	12.48	12.8	11.179
(line)	600	600	600	600	600
V front porch (mS)	0.028	0.026	0.77	0.021	0.019
(line)	1	1	37	1	1
V sync pulse width (mS)	0.057	0.106	0.125	0.064	0.056
(line)	2	4	6	3	3
V back porch (mS)	0.626	0.607	0.478	0.448	0.503
(line)	22	23	23	21	27
H sync polarity	Pos.	Pos.	Pos.	Pos.	Pos.
V sync polarity	Pos.	Pos.	Pos.	Pos.	Pos.
Scan type	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced

PC mode	16	17	18	19	20
Signal name	MAC@16”	I/O dater wide	CEREB wide 1	VESA wide (NEC 1)	VESA wide (NEC 2)
Definition	832*624	852*480	864*480	848*480	1024*576
Dot clock frequency (MHz)	57.2832	34.006	42.526	33.75	47.25
H frequency (kHz)	49.725	31.722	37.5	31.02	35.795
V frequency (Hz)	74.55	59.966	75	60	60.059
H total (uS)	20.111	31.524	26.667	32.237	27.937
(dots)	1152	1072	1134	1088	1320
H display period (uS)	14.524	25.055	20.317	25.126	21.672
(dots)	832	852	864	848	1024
H front porch (uS)	0.559	0.659	0.508	0.474	0.339
(dots)	32	22	22	16	16
H sync pulse width (uS)	1.117	3.764	2.032	3.319	3.048
(dots)	64	128	86	112	144
H back porch (uS)	3.91	2.047	3.81	3.319	2.878
(dots)	224	70	162	112	136
V total (mS)	13.414	16.676	13.333	16.667	16.65
(line)	667	529	500	517	596
V display period (mS)	12.549	15.132	12.8	15.474	16.091
(line)	624	480	480	480	576
V front porch (mS)	0.02	0.378	0.027	0.193	0.056
(line)	1	12	1	6	2
V sync pulse width (mS)	0.06	0.095	0.08	0.258	0.112
(line)	3	3	3	8	4
V back porch (mS)	0.784	1.072	0.427	0.741	0.391
(line)	39	34	16	23	14
H sync polarity	Sync on G	Neg	Pos.	Pos.	Pos.
V sync polarity	Sync on G	Neg	Neg	Pos.	Pos.
Scan type	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced

PC mode	21	22	23	24	25
Signal name	VESA wide (NEC 3)	VESA wide (NEC 4)	CEREB wide 2	VESA 768@60Hz	VESA 768@70Hz
Definition	1280*720	1360*768	1024*600	1024*768	1024*768
Dot clock frequency (MHz)	76.5	85.5	51.2	65	75
H frequency (kHz)	45.106	47.712	37.879	48.363	56.476
V frequency (Hz)	60.142	60.015	60.317	60.004	70.069
H total (uS)	22.17	20.959	26.4	20.677	17.707
(dots)	1696	1792	1352	1344	1328
H display period (uS)	16.732	15.906	20	15.754	13.653
(dots)	1280	1360	1024	1024	1024
H front porch (uS)	0.627	0.749	1	0.369	0.32
(dots)	48	64	51	24	24
H sync pulse width (uS)	2.301	1.310	3.2	2.092	1.813
(dots)	176	112	164	136	136
H back porch (uS)	2.51	2.994	2.2	2.462	1.92
(dots)	192	256	113	160	144
V total (mS)	16.627	16.662	15.579	16.666	14.272
(line)	750	795	628	806	806
V display period (mS)	15.962	16.097	15.84	15.88	13.599
(line)	720	768	600	768	768
V front porch (mS)	0.089	0.063	0.026	0.062	0.053
(line)	4	3	1	3	3
V sync pulse width (mS)	0.177	0.126	0.106	0.124	0.106
(line)	8	6	4	6	6
V back porch (mS)	0.399	0.377	0.607	0.6	0.513
(line)	18	18	23	29	29
H sync polarity	Pos.	Pos.	Neg	Neg.	Neg.
V sync polarity	Pos.	Pos.	Pos.	Neg.	Neg.
Scan type	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced

PC mode	26	27	28	29	30
Signal name	VESA 768@75Hz	VESA 768@85Hz	MAC@19”	VESA 1024@60Hz	VESA 1024@75Hz
Definition	1024*768	1024*768	1024*768	1280*1024	1280*1024
Dot clock frequency (MHz)	78.75	94.5	80	108	135
H frequency (kHz)	60.023	68.677	60.24	63.981	79.976
V frequency (Hz)	75.029	84.997	74.93	60.02	75.025
H total (uS)	16.66	14.561	16.600	15.63	12.501
(dots)	1312	1376	1328	1688	1688
H display period (uS)	13	10.836	12.8	11.852	9.481
(dots)	1024	1024	1024	1280	1280
H front porch (uS)	0.203	0.508	0.4	0.444	0.119
(dots)	16	48	32	48	2
H sync pulse width (uS)	1.219	1.016	1.2	1.037	1.067
(dots)	96	96	96	112	144
H back porch (uS)	2.235	2.201	2.2	2.296	1.837
(dots)	176	208	176	248	248
V total (mS)	13.328	11.765	13.347	16.661	13.329
(line)	800	808	804	1066	1066
V display period (mS)	12.795	11.183	12.749	16.005	12.804
(line)	768	768	768	1024	1024
V front porch (mS)	0.017	0.015	0.050	0.016	0.013
(line)	1	1	3	1	1
V sync pulse width (mS)	0.05	0.044	0.050	0.047	0.038
(line)	3	3	3	3	3
V back porch (mS)	0.466	0.524	0.498	0.594	0.475
(line)	28	36	30	38	38
H sync polarity	Pos.	Pos.	—	Pos.	Pos.
V sync polarity	Pos.	Pos.	—	Pos.	Pos.
Scan type	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced	Non Interlaced

PC mode	31	32	33	34	35
Signal name	IDC-3000G PAL 625P	IDC-3000G NTSC 525P	HDTV-J	DTV (480P)	DTV (720P)
Definition	768*576	640*480	1920*1034	644*483	1280*720
Dot clock frequency (MHz)	29.687	24.39	74.25	24.37	74.25
H frequency (kHz)	31.389	31.47	33.75	31.469	45.000
V frequency (Hz)	50	59.9	60/60	59.94	60
H total (uS)	31.933	31.775	29.63	31.777	22.222
(dots)	948	775	2200	774	1650
H display period (uS)	25.87	26.24	25.86	26.427	17.239
(dots)	768	640	1920	644	1280
H front porch (uS)	0.269	0.41	0.59	0.75	0.943
(dots)	8	10	44	18	70
H sync pulse width (uS)	2.526	2.46	0.59	2.35	1.077
(dots)	75	60	44	57	80
H back porch (uS)	3.267	2.665	2.59	2.25	2.963
(dots)	97	65	192	55	220
V total (mS)	19.911	16.522	16.652	16.683	16.667
(line)	625	525	562/562	525	750
V display period (mS)	18.35	15.106	15.319	15.348	
(line)	576	480	517/517	483	720
V front porch (mS)	0.223	0.252	0.148	0.191	0.111
(line)	7	8	5	6	5
V sync pulse width (mS)	0.223	0.22	0.148	0.191	0.111
(line)	7	7	5	6	5
V back porch (mS)	1.115	0.944	1.037	0.953	0.444
(line)	35	30	35	30	20
H sync polarity	Neg	Neg	Neg	Neg	Neg
V sync polarity	Neg	Neg	Neg	Neg	Neg
Scan type	Non Interlaced	Non Iinterlaced	Interlaced	Non Interlaced	Non Interlaced

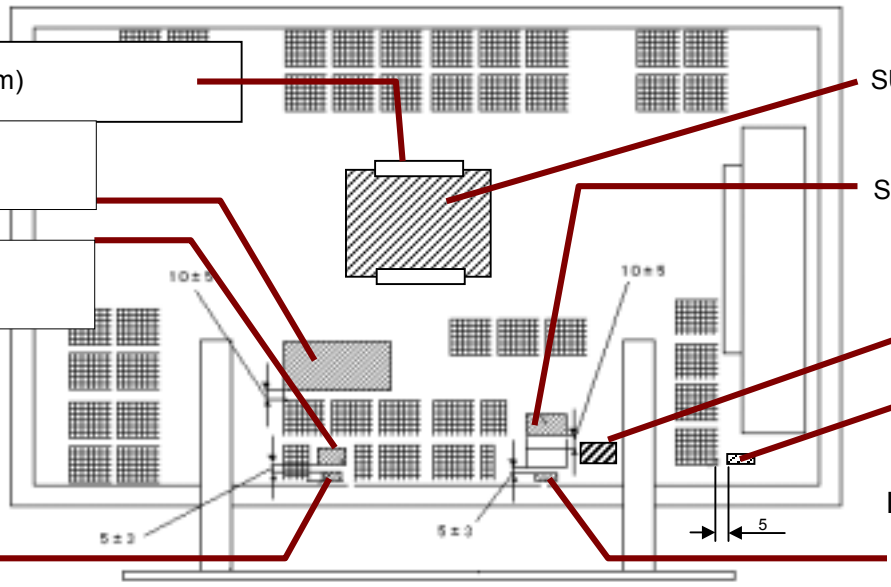
PC mode	36	37	38	39
Signal name	HDTV-W	SSPE	JSPE	MAC@12”
Definition	1920*1080	1024*512	852*480	1152*870
Dot clock frequency (MHz)	74.25	40	16	100
H frequency (kHz)	33.75	33.727	15.75	68.681
V frequency (Hz)	60/60	60.012	59.94	75.062
H total (uS)	29.630	29.650	63.750	14.560
(dots)	2200	1186	1020	1456
H display period (uS)	25.859	25.600	53.250	11.520
(dots)	1920	1024	852	1152
H front porch (uS)	0.593	0.600	1.250	0.320
(dots)	44	24	20	32
H sync pulse width (uS)	1.185	1.200	4.750	1.280
(dots)	88	48	76	128
H back porch (uS)	1.993	2.250	4.500	1.440
(dots)	148	90	72	144
V total (mS)	16.652/16.682	16.663	16.683	13.322
(line)	562/563	562	262.5/262.5	915
V display period (mS)	16.000/16.000	15.15	15.236/15.236	12.667
(line)	540/540	511	239/239	870
V front porch (mS)	0.059/0.074	0.178	0.064/0.096	0.044
(line)	2/2.5	6	1/1.5	3
V sync pulse width (mS)	0.148/0.148	0.148	0.191/0.191	0.044
(line)	5/5	5	3/3	3
V back porch (mS)	0.444/0.459	1.186	1.211/1.243	0.568
(line)	15/15.5	40	19/19.5	39
H sync polarity	Neg	Neg	Neg	Sync on G
V sync polarity	Neg	Neg	Neg	Sync on G
Scan type	Interlaced	Non Interlaced	Interlaced	Non Interlaced

METHOD OF DISASSEMBLY

(Cautions)

1. Before disassembly, turn power off the main unit and pull out the power plug from the wall outlet.
2. Use a screwdriver with a fitting size. Otherwise, the screw threads may be damaged.
3. Reassembly can be carried out in the reverse order for disassembly. Refer to the disassembly procedures and forward reassembly in the reverse order.
4. The order for taking out the parts (or components) is indicated by the foregoing numeral that is attached to the name of each part (or component).
5. The wire connector symbol is indicated by two digits of Marking□□. Read CN-□□when examining the table of parts.

1.LABEL



FILAMENT TAPE(9mm*50m)

NAME PLATE(M53)

LABEL (EARTH) (M65)

AC IN LABEL(M55)

SUPPLEMENT SHEET (M62)

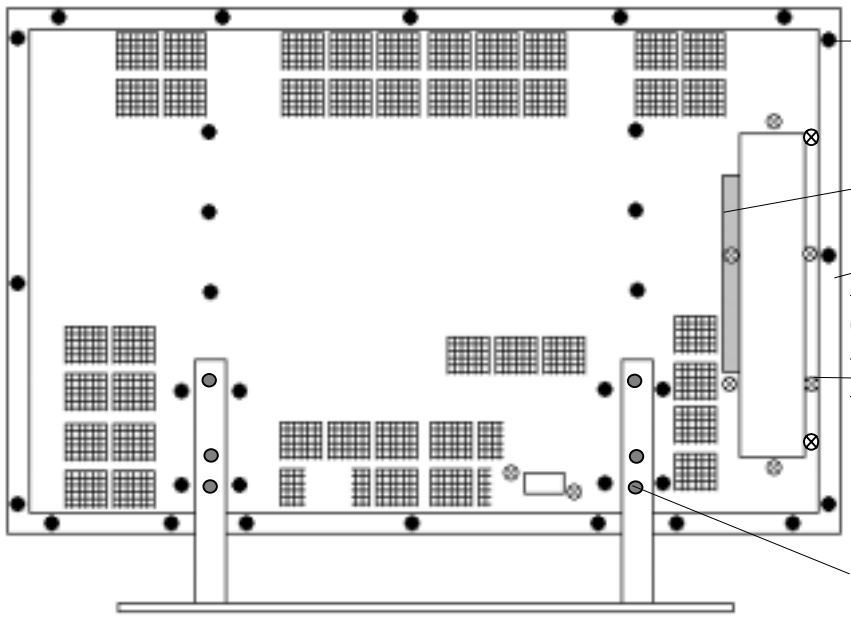
SPEAKER LABEL(M54)

SERIAL LABEL(M10)

LABEL A (2001) (M66)

LABEL (OUT) (M64)

2.BACK COVER



(1)PL-CPIMS*4*12*15KF(SRW36) *32

TERMINAL LABEL B (M57)

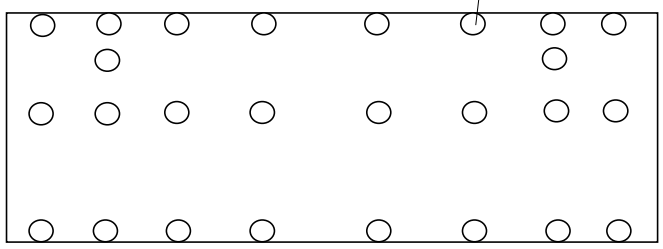
(3) BACK COVER (M58) 72790175

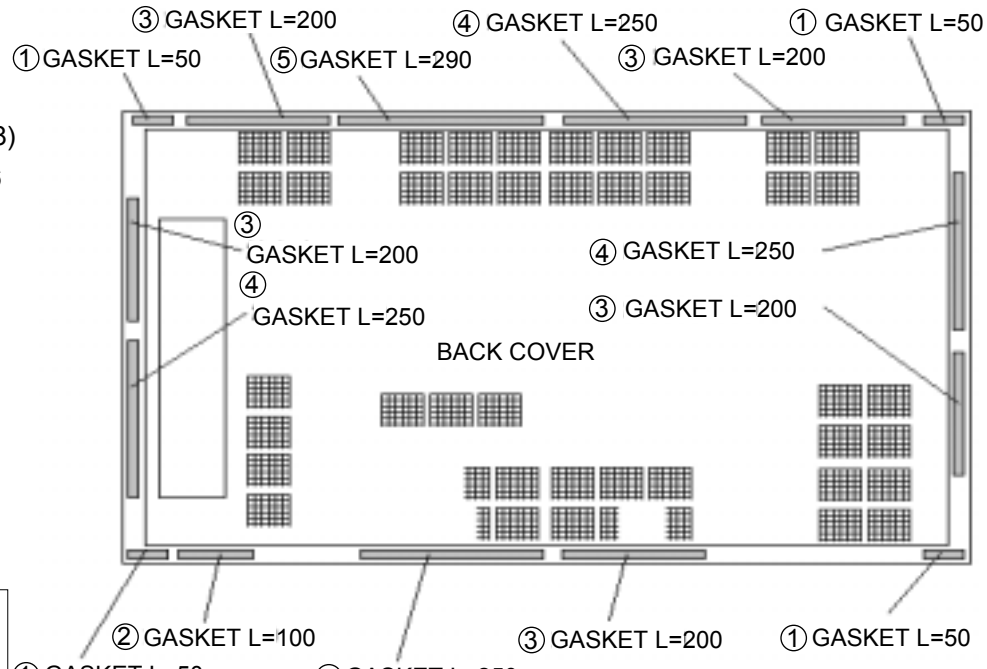
(2)PL-CPIMS*3*6*3KF(SRW35) *10

SCREW(M68) 72790191 *6

FELTSHHET(M69) *26

STAND REAR SIDE

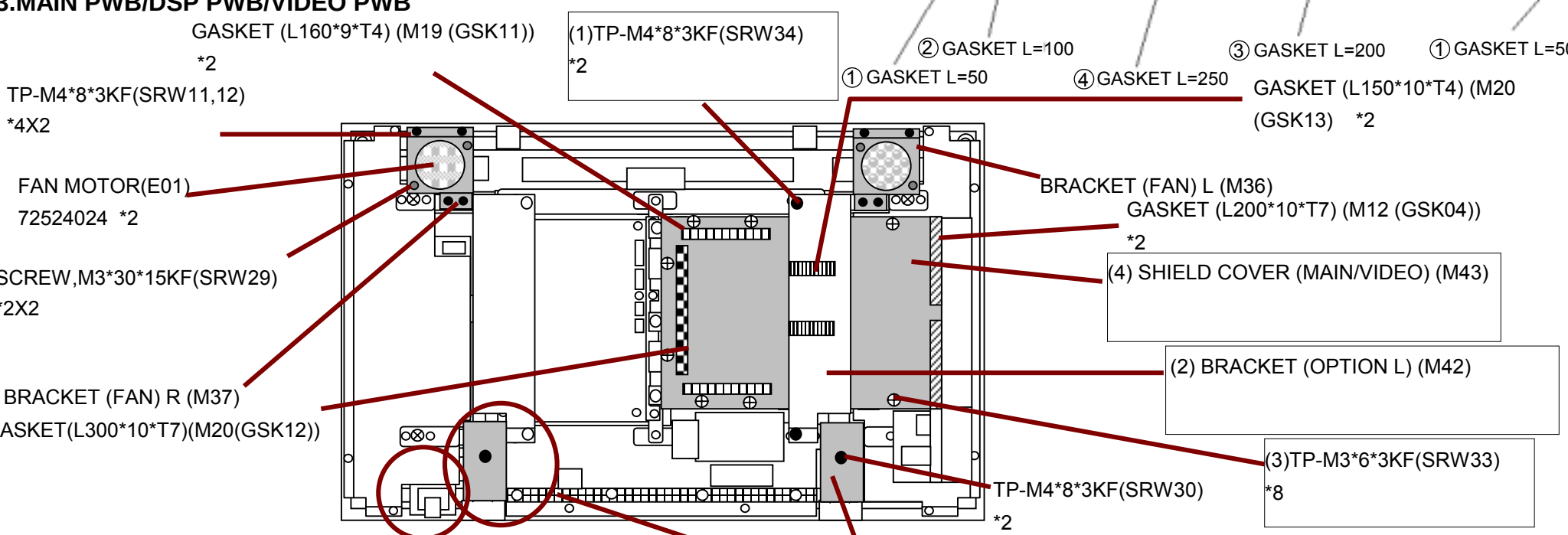




BACK COVER REAR SIDE

SYMBOL	PARTS NAME	Q'TY
① (GSK03)	GASKET (L50*10*T7)	4
② (GSK04)	GASKET (L200*10*T7)	5
③ (GSK05)	GASKET (L290*10*T7)	1
④ (GSK06)	GASKET (L250*10*T7)	4
⑤ (GSK07)	GASKET (L100*10*T7)	1

3.MAIN PWB/DSP PWB/VIDEO PWB



GASKET (L160*9*T4) (M19 (GSK11)) *2

TP-M4*8*3KF(SRW11,12) *4X2

FAN MOTOR(E01) 72524024 *2

SCREW,M3*30*15KF(SRW29) *2X2

BRACKET (FAN) R (M37)

GASKET(L300*10*T7)(M20(GSK12))

(1)TP-M4*8*3KF(SRW34) *2

GASKET (L150*10*T4) (M20 (GSK13) *2

BRACKET (FAN) L (M36)

GASKET (L200*10*T7) (M12 (GSK04)) *2

(4) SHIELD COVER (MAIN/VIDEO) (M43)

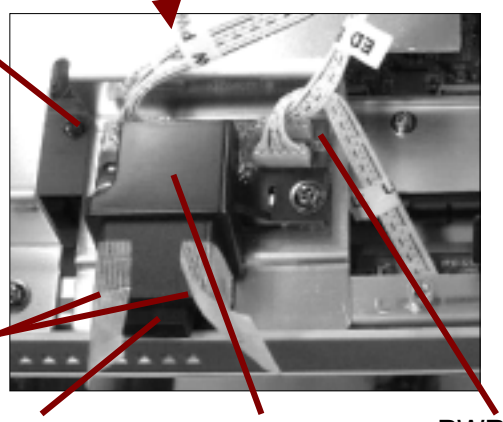
(2) BRACKET (OPTION L) (M42)

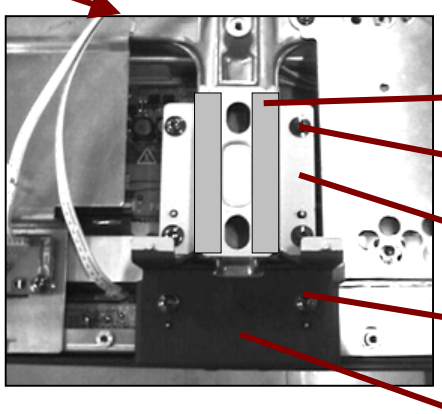
(3)TP-M3*6*3KF(SRW33) *8

TP-M4*8*3KF(SRW30) *2

COVER(BOTTOM)(M29) *2

TP-M4*8*3KF(SRW28) *1X2





GASKET(L70*10*T1)(M18(GSK10) *2X2

TP-M4*8*3KF(SRW31) *4X2

BRACKET STAND(A)(M30) *2

TP-M4*8*3KF(SRW32) *2X2

BRACKET STAND(B)(M31) *2

(Caution) When mounting a back cover, stick the filament tape (30mm*50m) (092203969) for the prevention of getting flaws. In this case, however, the filament tape shall be removed after mounting.

BUTTON(PWR)(M07) 72623214

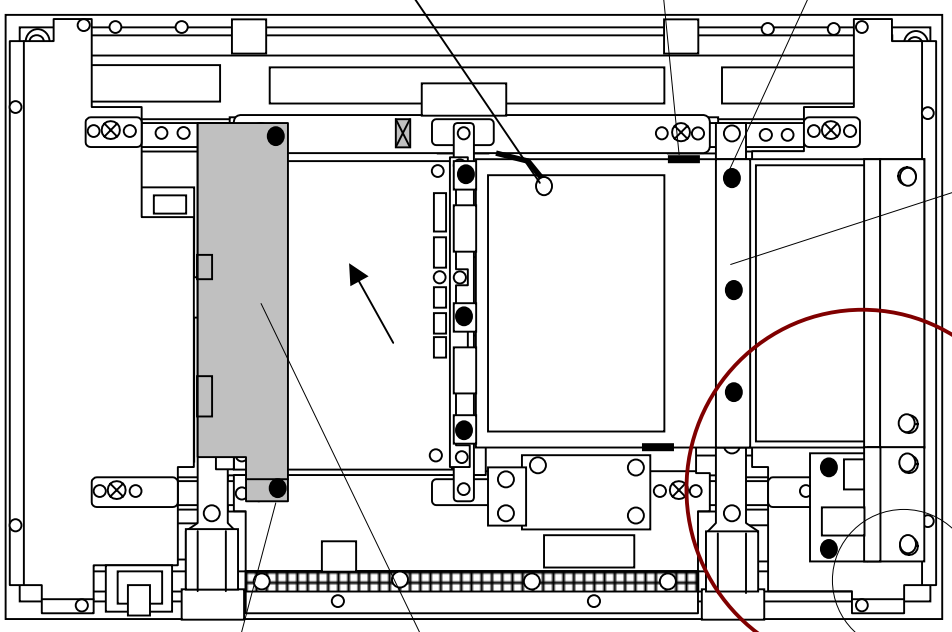
COVER(POWER SW)(M26) 72790173

PWR PWB ASSY(PWC-4419C)(A10)

(Caution) At the time of assembly, it shall be tightened together with the round terminal of the connector CN-AD.

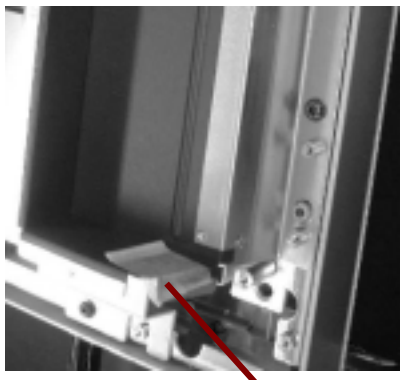
EDGE SADDLE(M06)
*3

(5)TP-M4*8*3KF(SRW13)
*6



(6) TERMINAL PANEL (VI) ASSY (M59)
72790176

Adhesion of the protective tape



(Caution) When mounting a back cover, stick the filament tape (30mm*50m) (092203969) for the prevention of getting flaws.
In this case, however, the filament tape shall be removed after mounting.

TP-M4*8*3KF(SRW34)
*2

BRACKET (OPTION R) (M44)

TP-M3*6*3KF(SRW19)
*2

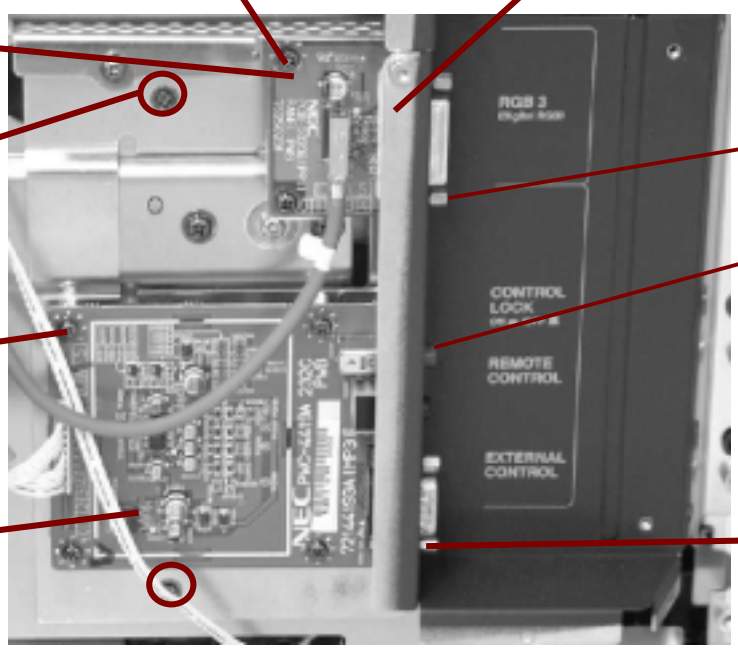
TERMINAL PANEL (232) ASSY (M60)
72790177

PANEL PWB ASSY (PCB-5023B) (A03)

PL-CPIMS*3*6*3KF(SRW15)
*2

TP-M3*6*3KF(SRW20)
*4

232C PWB ASSY (PWC-4419A) (A08)
72790190



SCREW(UNC4-40/4-40)(SRW241)
*2

C/L BUTTON(M08)

PL-CPIMS*3*6*3KF(SRW202)
*2

• TERMINAL PANEL (VI) ASSY

(8) MAIN PWB ASSY (PCB-5022) (A01)
72790194

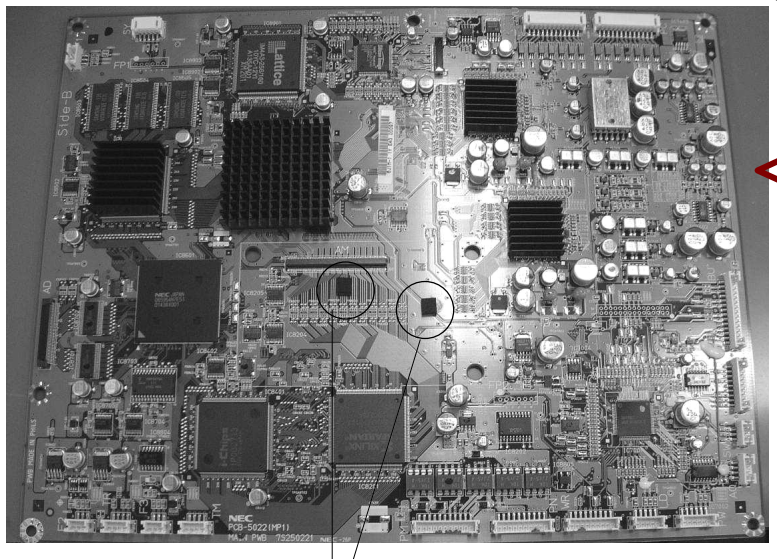
(9) DSP PWB ASSY (PCB-5022) (A06)
72790196

(7)TP-M3*6*3KF(SRW16,162)
*9

(12)TP-M3*6*3KF(SRW17)
*5

(13) VIDEO PWB ASSY(PCB-5023A) (A02)
72790195

[C]



[C]

[A]

SHIELD PLATE (VIDEO) (M46)

[D]

[D]

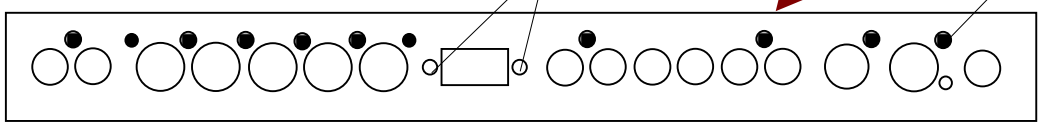
[B]

(11) 6SCREW (UNC4-40/4-40) (SRW106)
*2

(10) CBIPS*3*8*3KF (SRW18)
*9

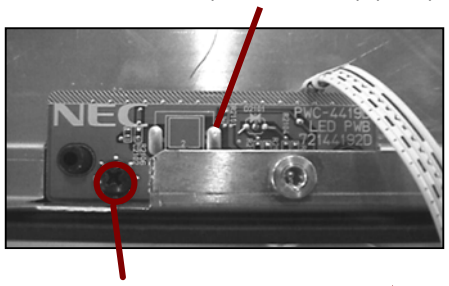
CUSHION RUBBER(M70)
*2

[B]



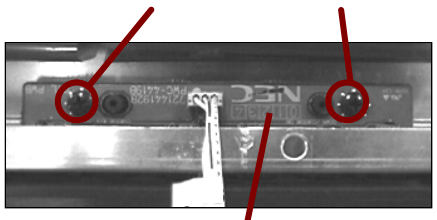
[A]

4. AUDIO AMPLIFIER MODULE

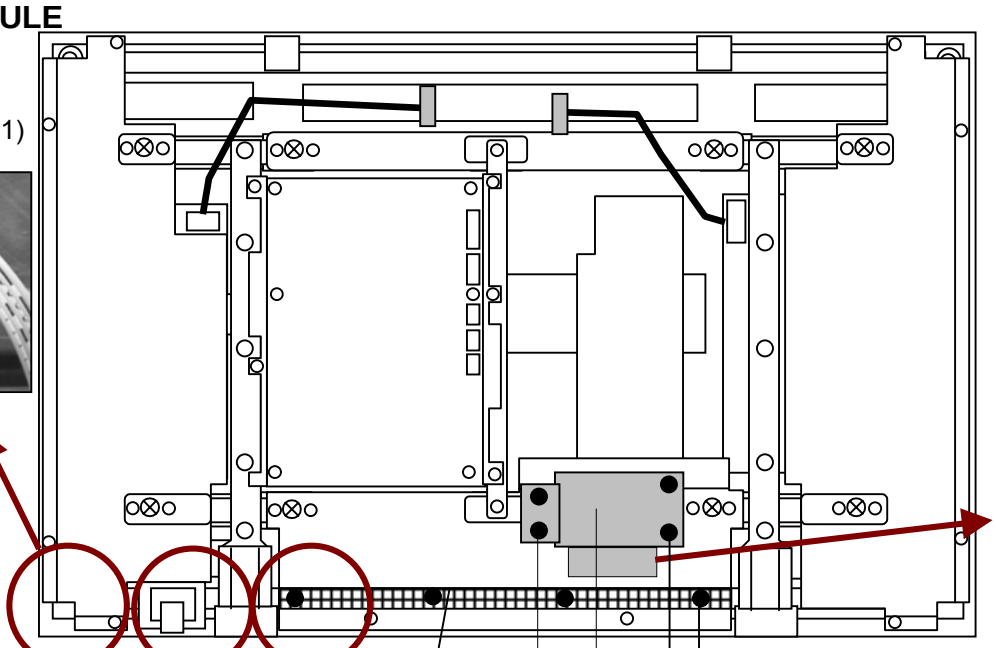


LED PWB ASSY (PCB-4419B) (A11)

CBIPS*4*12*3KF (SRW02)
*3

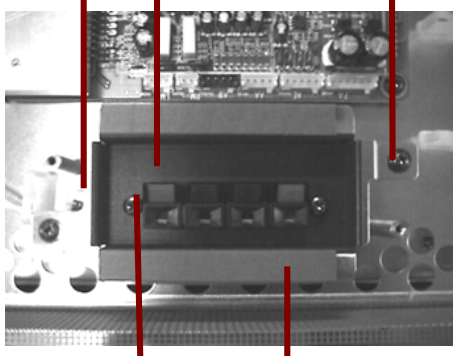


CTL PWB ASSY (PCB-4419B) (A09)



SP PWB ASSY (PWC-4419E) (A12)
TERMINAL PANEL (SP) (M61)
72621140

TP-M3*6*3KF(SRW24)
*2



TP-M4*8*3KF(SRW37)
*4

CBIPS*3*8*3KF(SRW23)
*2

(1)TP-M3*6*3KF(SRW21)
*2

GASKET (L70*10*T1) (M17 (GSK09))
*2

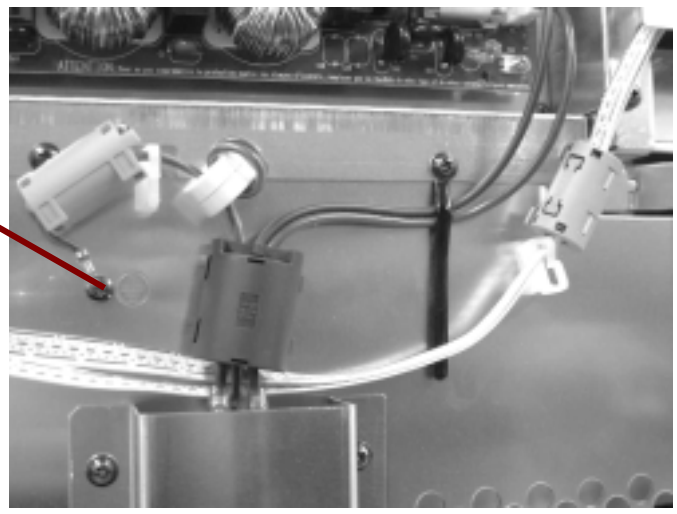
MESH (M47)

(3)AUDIO AMPLIFIER MODULE(A_UNIT)
72790157

(2)SCREW,P-CPIMS*3*14*3KF(SRW22)
*2

• AC INLET ASSY

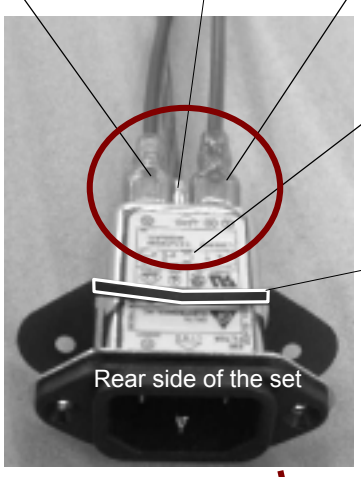
ET-CBIMS*4*8*3KF(SRW26)



CABLE 1P(E02) 07S530015 Green

CABLE 2P (E02)
Blue

CABLE 2P(E02) Brown

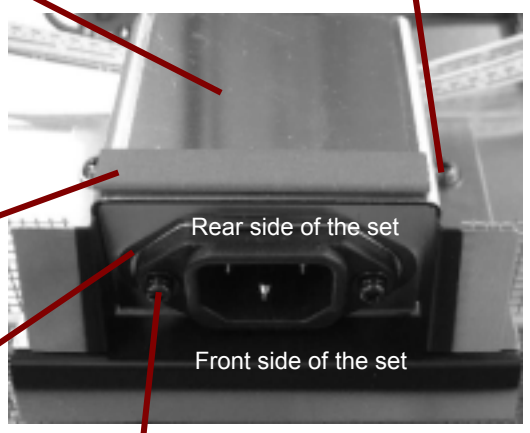


AC INLET 10GEEG3C(E02)
72563114

(Caution) No bending process

TP-M4*8*3KF(SRW27)
*2

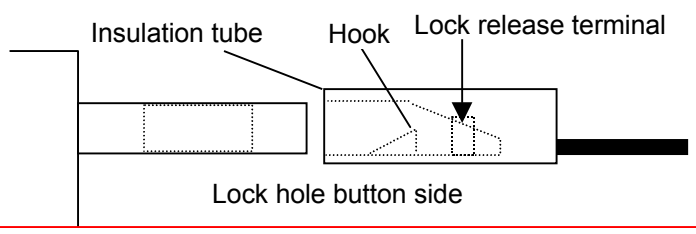
COVER (INLET) (M63)



GASKET (L60*10*T2) (M17 (GSK08))
*2

BARRIER (INLET) (M09)

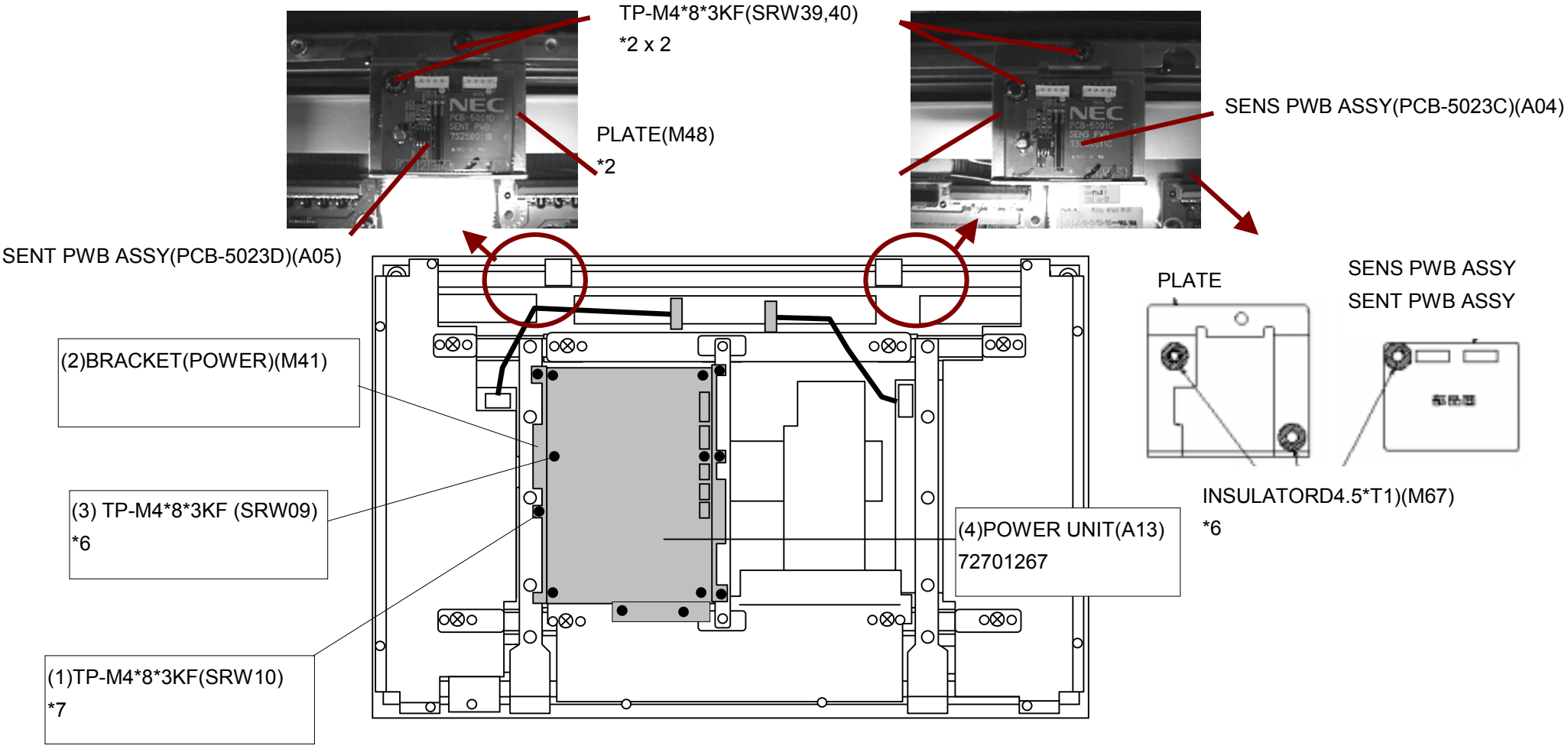
PL-CPIMS*3*10*15KF(SRW25)
*2



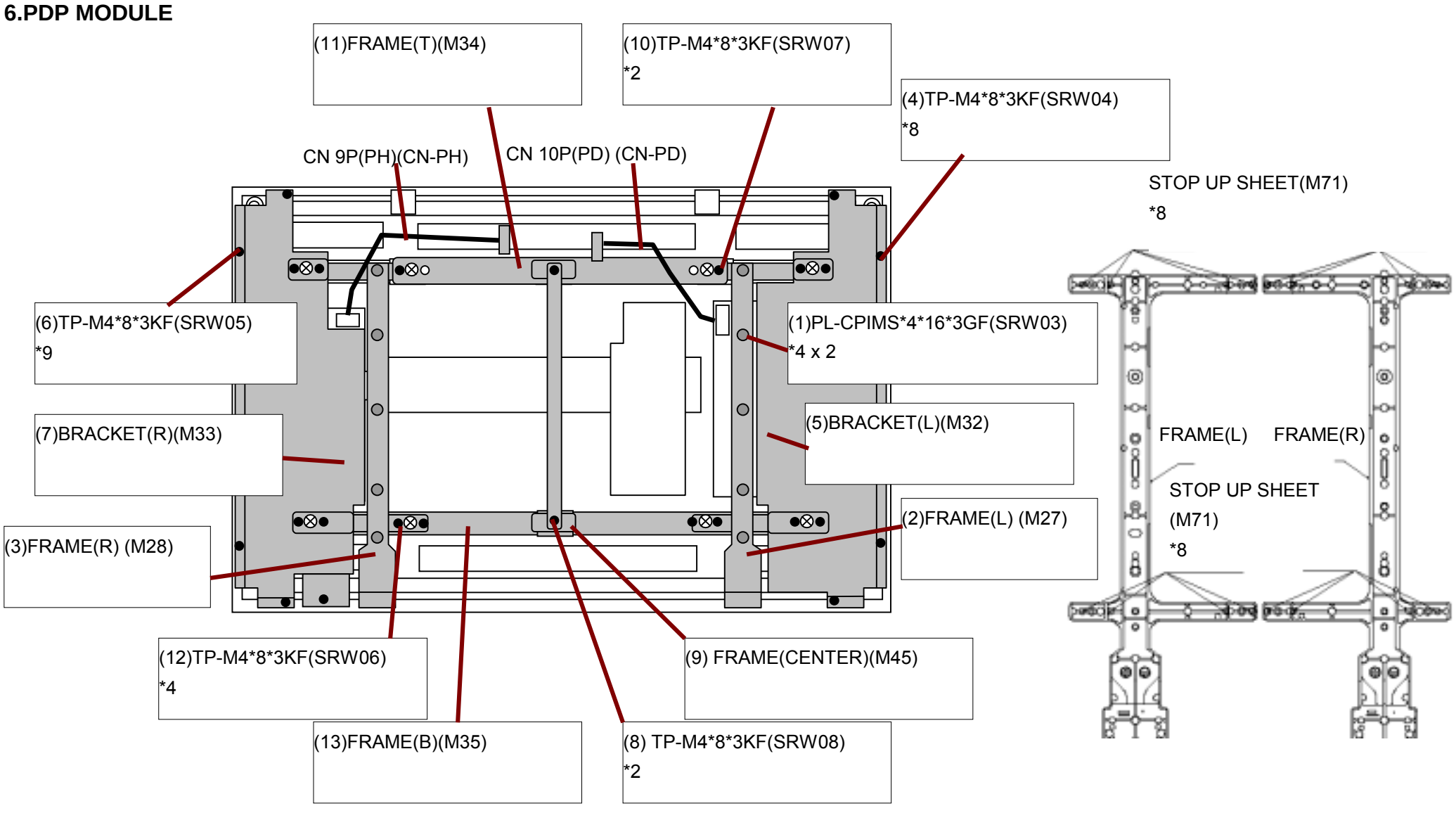
(Caution) Insert the cable in the AC inlet until its terminal hook is locked. After insertion, try to pull the cable to confirm whether or not it comes out. To disconnect the cable, push the lock release terminal by a finger in the direction of the arrow, and pull out the cable in the lengthwise direction. (No unlocking unless the position of hook's tip is lower than the lock hole bottom side.)

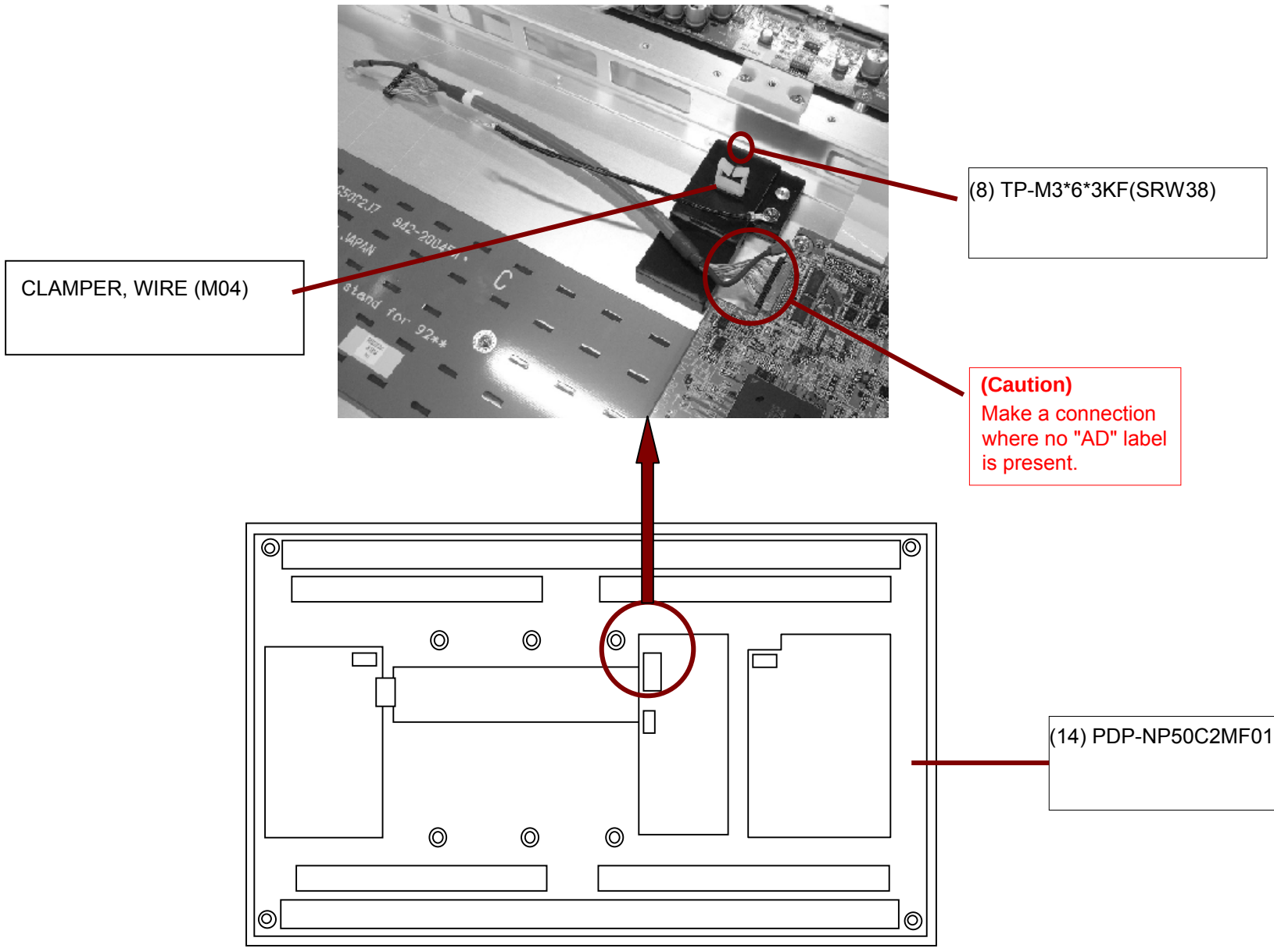
Side view

5. POWER UNIT

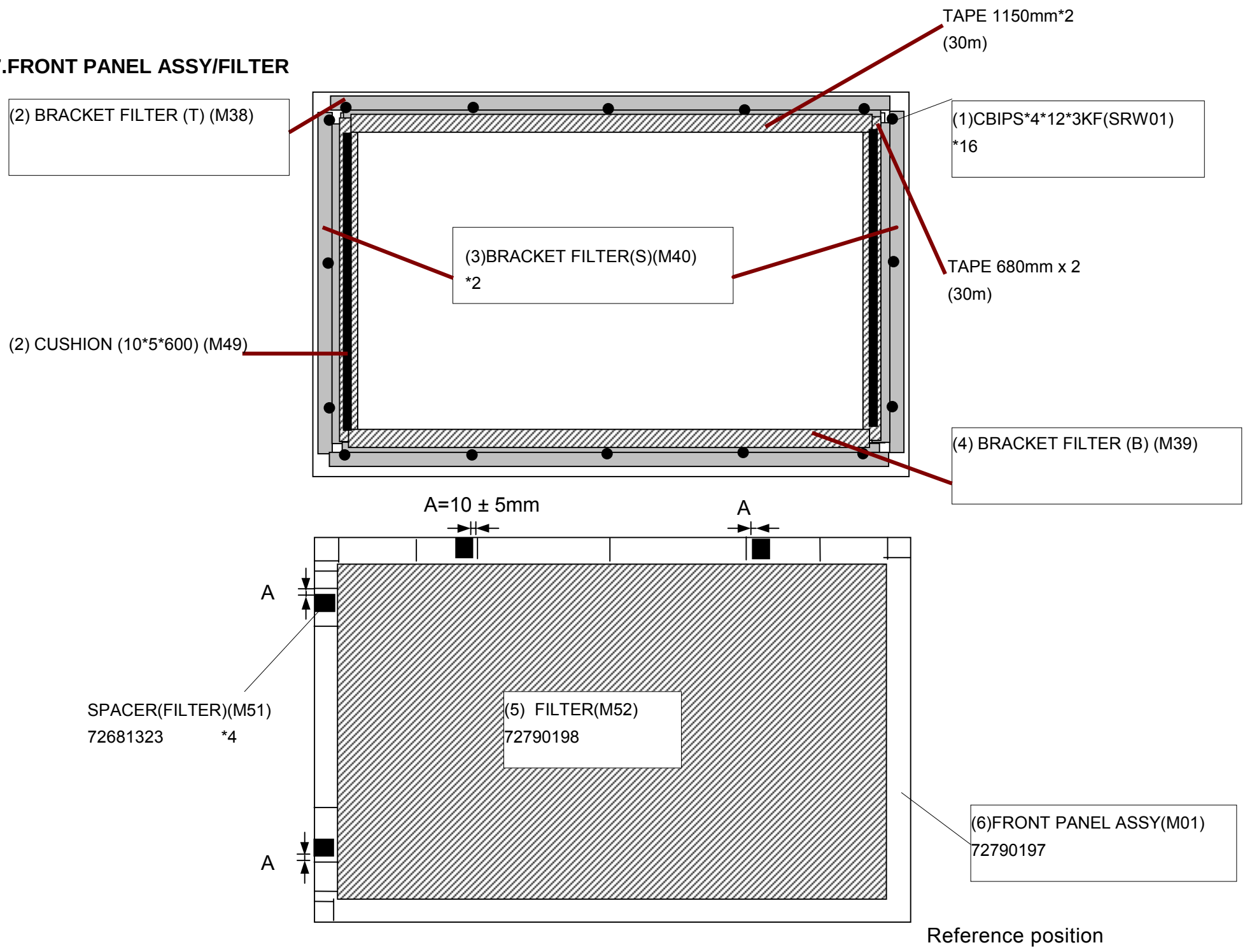


6.PDP MODULE

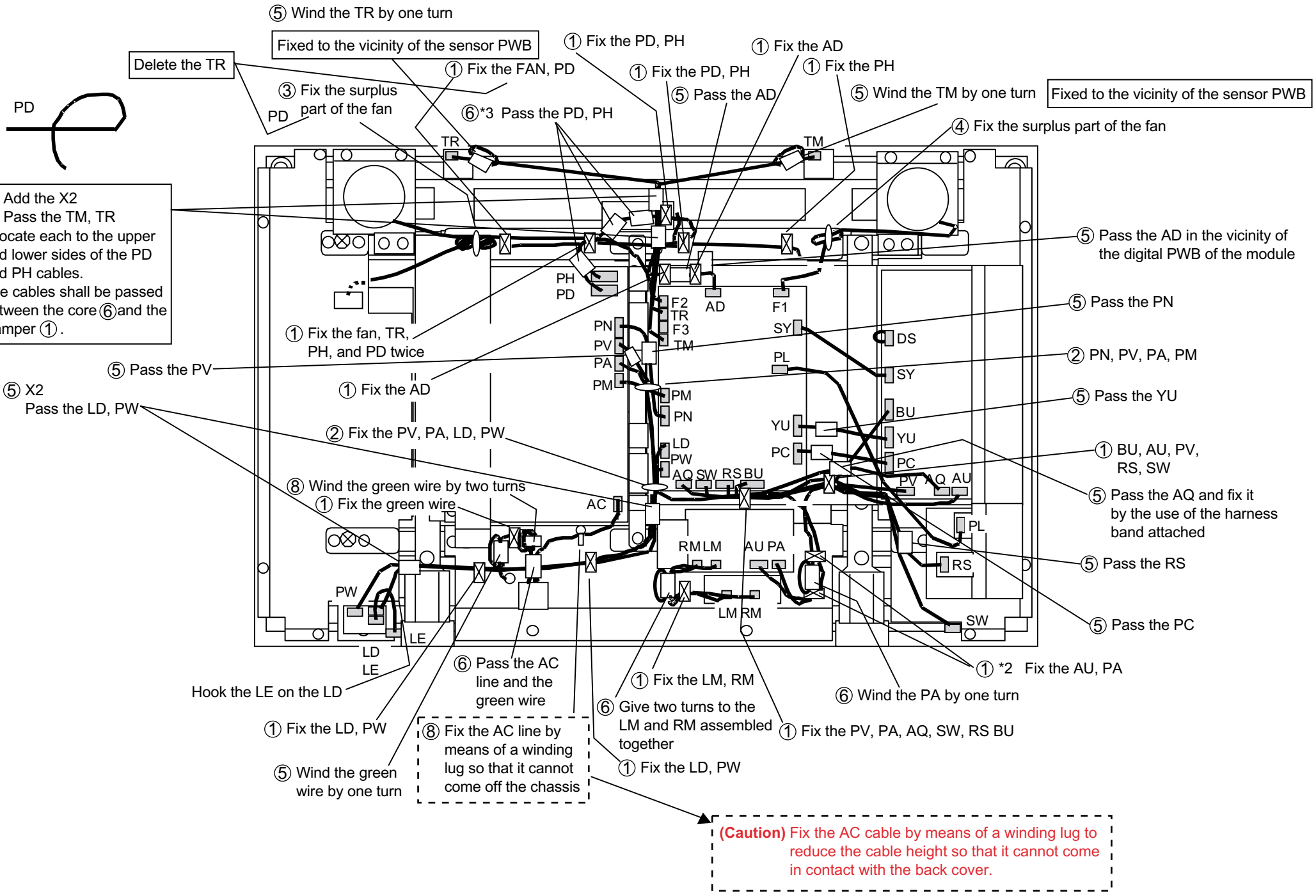




7.FRONT PANEL ASSY/FILTER



WIRING DIAGEAM

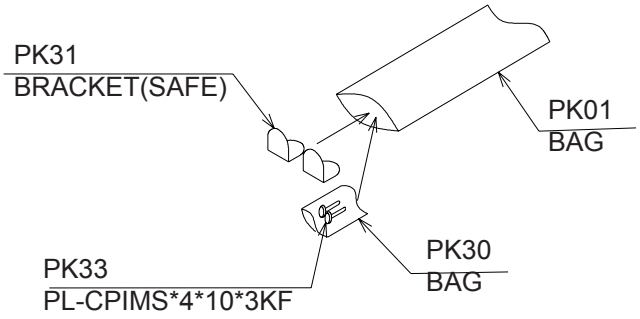

⑤ Wind the TR by one turn
Fixed to the vicinity of the sensor PWB
Delete the TR
① Fix the FAN, PD
① Fix the PD, PH
① Fix the PD, PH
① Fix the AD
① Fix the PH
⑤ Wind the TM by one turn
Fixed to the vicinity of the sensor PWB
PD
③ Fix the surplus part of the fan
PD
⑥*3 Pass the PD, PH
⑤ Pass the AD
④ Fix the surplus part of the fan
⑤ Add the X2
Pass the TM, TR
Allocate each to the upper and lower sides of the PD and PH cables.
The cables shall be passed between the core ⑥and the clamper ① .
⑤ Pass the AD in the vicinity of the digital PWB of the module
⑤ Pass the PN
⑤ Pass the PV
① Fix the fan, TR, PH, and PD twice
① Fix the AD
② PN, PV, PA, PM
⑤ X2
Pass the LD, PW
⑤ Pass the YU
② Fix the PV, PA, LD, PW
① BU, AU, PV, RS, SW
⑧ Wind the green wire by two turns
① Fix the green wire
⑤ Pass the AQ and fix it by the use of the harness band attached
⑤ Pass the RS
⑤ Pass the PC
① *2 Fix the AU, PA
⑥ Wind the PA by one turn
① Fix the LM, RM
⑥ Give two turns to the LM and RM assembled together
① Fix the PV, PA, AQ, SW, RS BU
① Fix the LD, PW
⑥ Pass the AC line and the green wire
Hook the LE on the LD
① Fix the LD, PW
⑤ Wind the green wire by one turn
⑧ Fix the AC line by means of a winding lug so that it cannot come off the chassis
(Caution) Fix the AC cable by means of a winding lug to reduce the cable height so that it cannot come in contact with the back cover.
TR
TM
PH
PD
F2
TR
F3
TM
AD
F1
PN
PV
PA
PM
SY
DS
PL
SY
PM
PN
LD
PW
AQ SW RS BU
YU
BU
YU
PC
PC
PV AQ AU
AC
PL
RM LM
AU PA
RS
PW
LE
LD
LE
LM RM
SW

SYMBOL		PARTS NAME	PART No.	Q'ty
—	CN-AD	CABLE 41P L250	72577074	1
—	CN-AQ	CN 4P(AQ) 400W,2791-28		1
—	CN-AU	CN 7P(AU) 500W,2791-28		1
—	CN-BU	CN 14P(BU) 325W,2468-26		1
—	CN-DS	CN 3P(DS) 50S, 1007-26		1
—	CN-LD	CN 5P(LD) 625W,2468-26		1
—	CN-LE	CN 5P(LE) 125,2468-26		1
—	CN-LM	CN 3P(LM) 400,2468-26		1
—	CN-PA	CN 6P(PA) 700,2468-26		1
—	CN-PC	CN 13P(PC) 125W,MIX		1
—	CN-PD	CN 10P(PD) 900W, 1007-20		1
—	CN-PH	CN 9P(PH) 500W, 1007-20		1
—	CN-PL	CABLE, TWINAX 21P L450		1
—	CN-PM	CN 11P(PM) 100W,2468-26		1
—	CN-PN	CN 10P(PN) 150W,2468-26		1
—	CN-PV	CN 8P(PV) 600W,2468-26		1
—	CN-PW	CN 6P(PW) 650W,2468-26		1
—	CN-RM	CN 2P(RM) 375,2468-26		1
—	CN-RS	CN 9P(RS) 475W,2468-26		1
—	CN-SW	CN 3P(SW) 625W,2468-26		1
—	CN-SY	CN 5P(SY) 175W,1691-28		1
—	CN-TM	CN 4P(TM) 525W,2468-26		1
—	CN-TR	CN 4P(TR) 525W,2468-26		1
—	CN-YU	CN 12P(YU) 125W,MIX		1

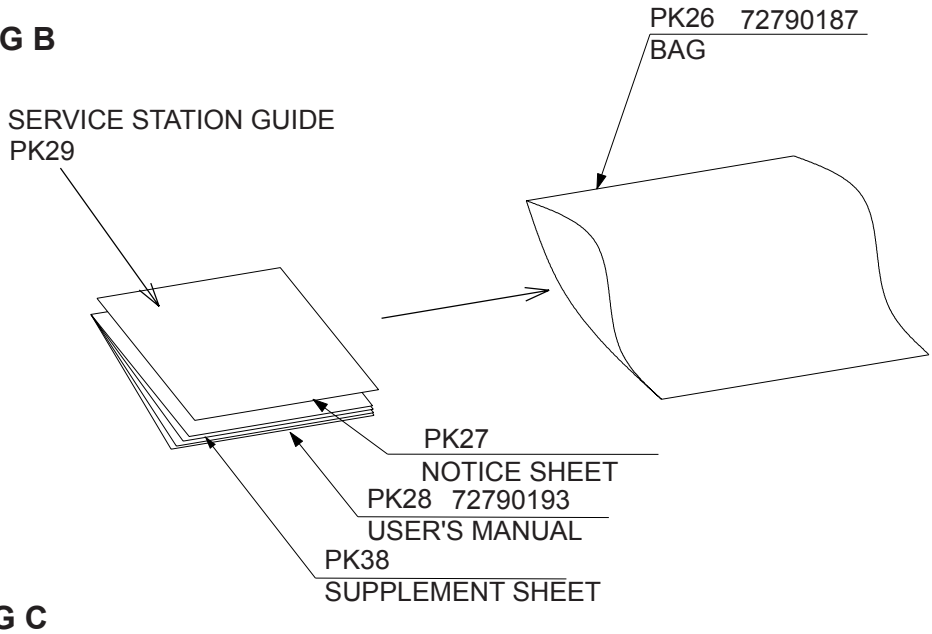
SYMBOL		PARTS NAME	PART No.	Q'ty
①	M02	CLAMPER,WIRE		15
②	M03	CLAMPER,WIRE (D11.5)		2
③	M05	CLAMPER,WIRE (D8.3)		1
④	M21	LEAD CLAMPER (D5.2)		1
⑤	FL31	FERRITE CORE ZCAT2032-930(FG)		1
⑤	FL12	FERRITE CORE ZCAT2032-930(AD)	72001821	2
⑤	FL35	FERRITE CORE ZCAT2032-930(TM)		1
⑤	FL36	FERRITE CORE ZCAT2032-930(TR)		1
⑤	FL5	FERRITE CORE ZCAT2032-930(PN)		1
⑤	FL6	FERRITE CORE ZCAT2032-930(RS)		1
⑤	FL8	FERRITE CORE ZCAT2032-930(PC)		1
⑤	FL37	FERRITE CORE ZCAT2032-930(LD/PW)		1
⑤	FL38	FERRITE CORE ZCAT2032-930(LD/PW)		1
⑤	FL51	FERRITE CORE ZCAT2032-930(PV)		1
⑤	FL52	FERRITE CORE ZCAT2032-930(AQ)		1
⑤	FL53	FERRITE CORE ZCAT2032-930(YU)		1
⑤	FL54	FERRITE CORE ZCAT2032-930(TR'/TM')		2
⑥	FL30	FERRITE CORE SFT-72SB (AC FG)		1
⑥	FL11	FERRITE CORE SFT-72SB (PA)	72001822	1
⑥	FL33	FERRITE CORE SFT-72SB (LM,RM)		1
⑥	FL7	FERRITE CORE SFT-72SB (PD/PH)		3
⑦	FL32	FERRITE CORE (ESD-R-19) (FG)	72790222	1
⑧	M72	LUG (L72)		1

PACKAGING

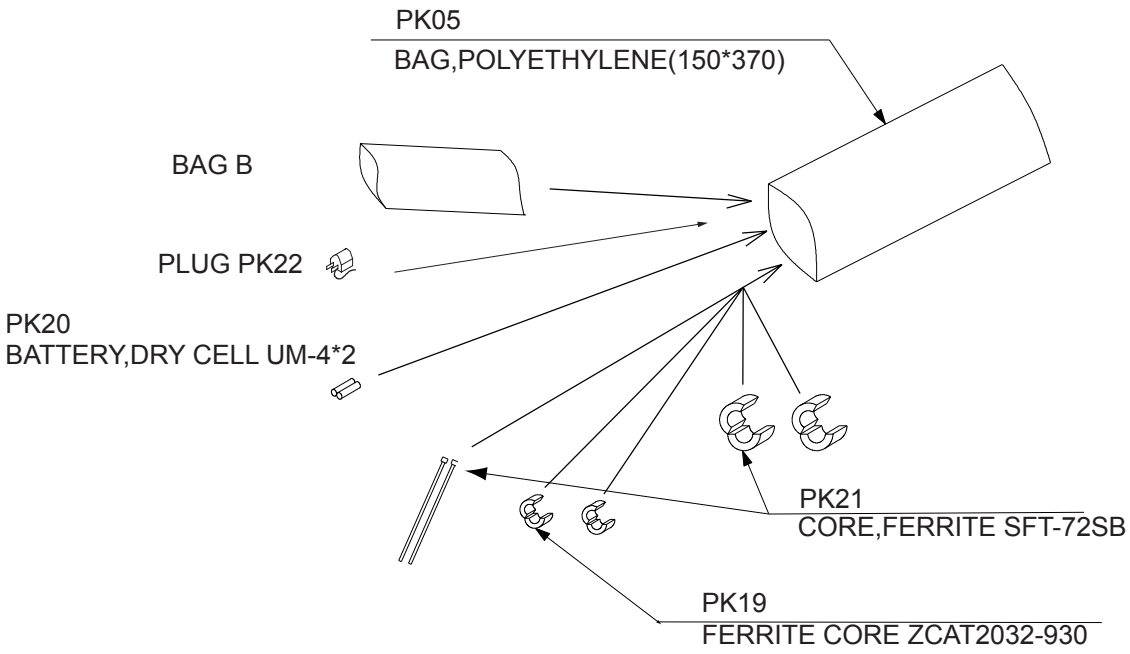
1.BAG A



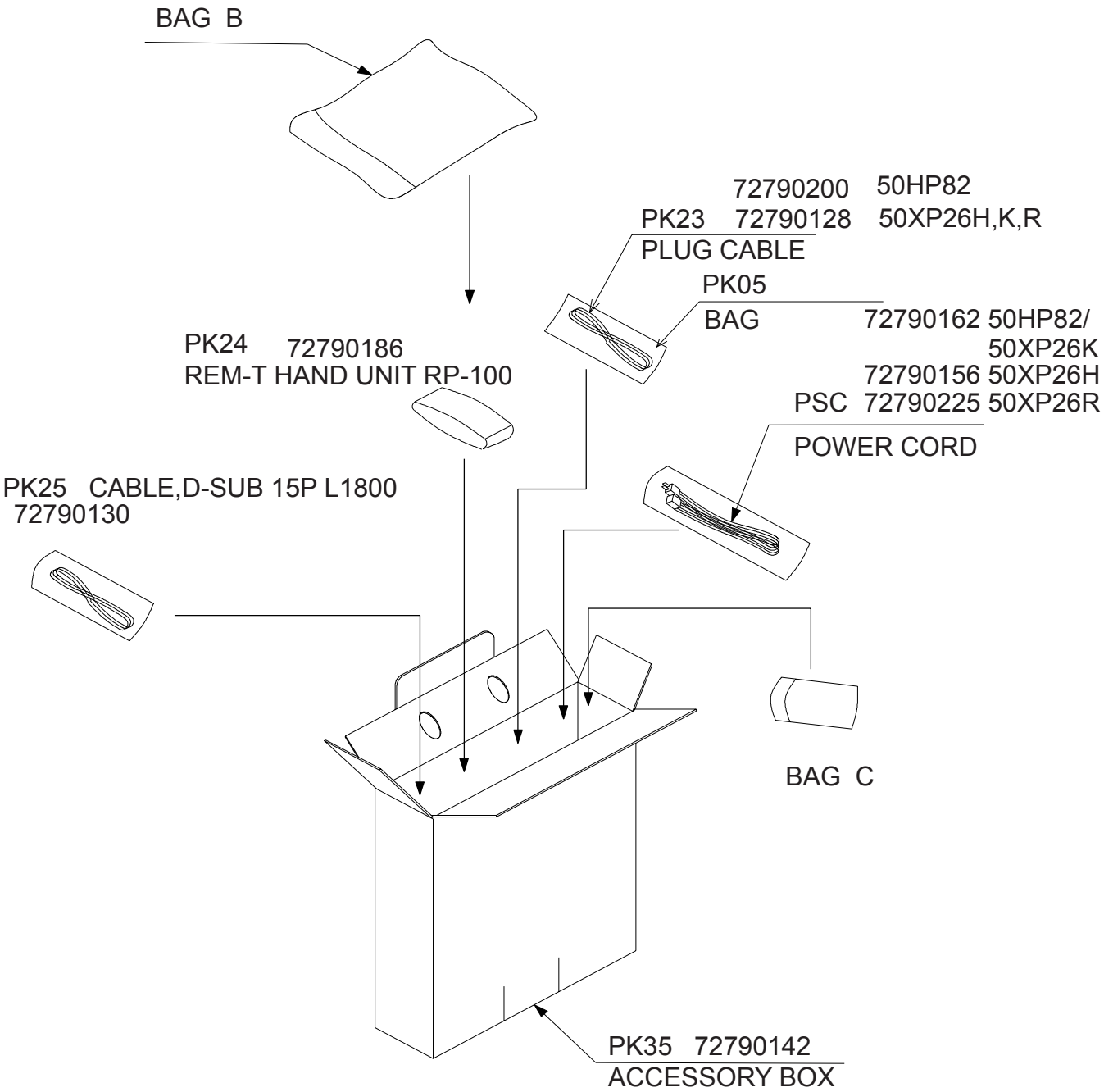
2.BAG B



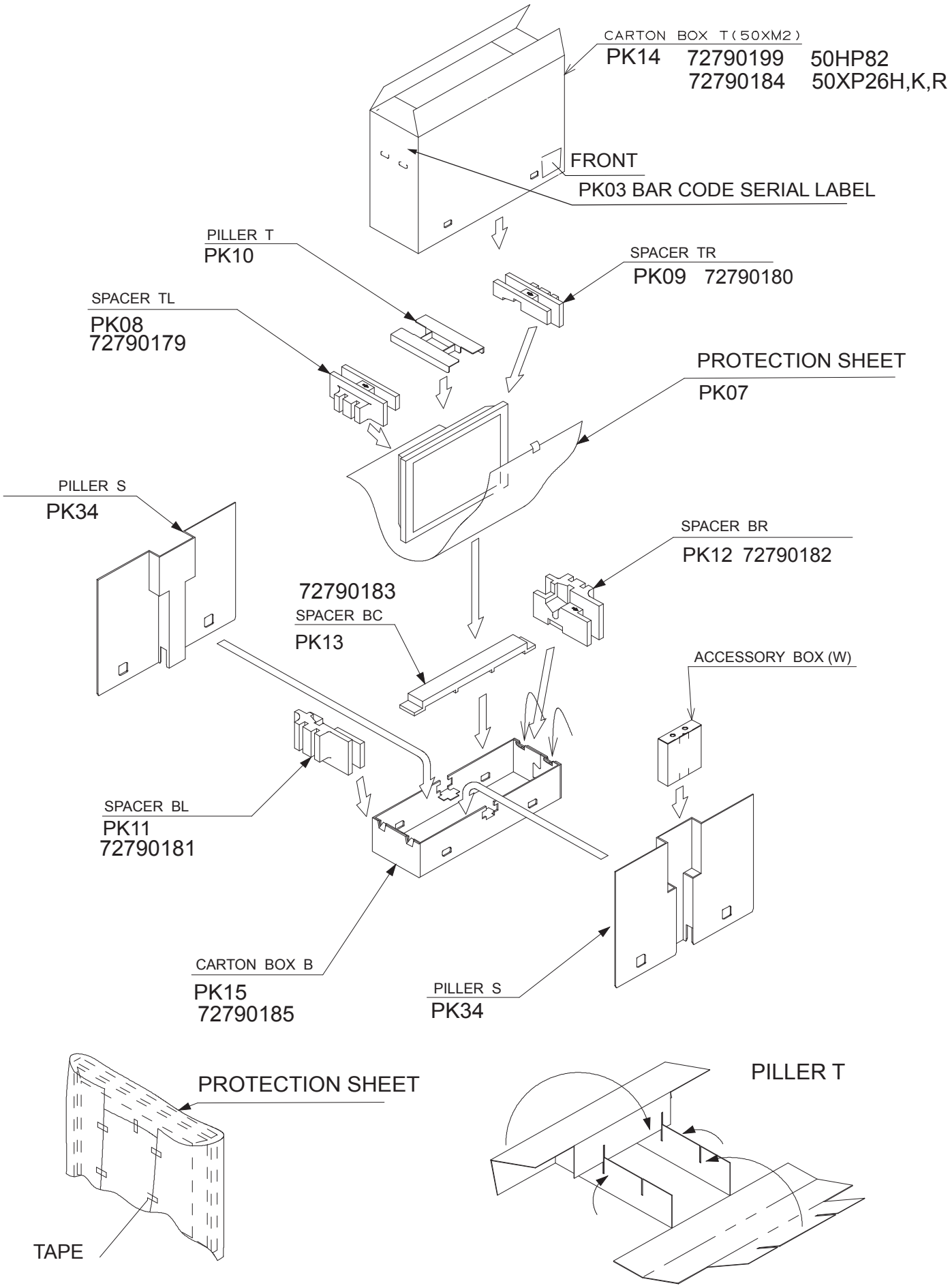
3.BAG C

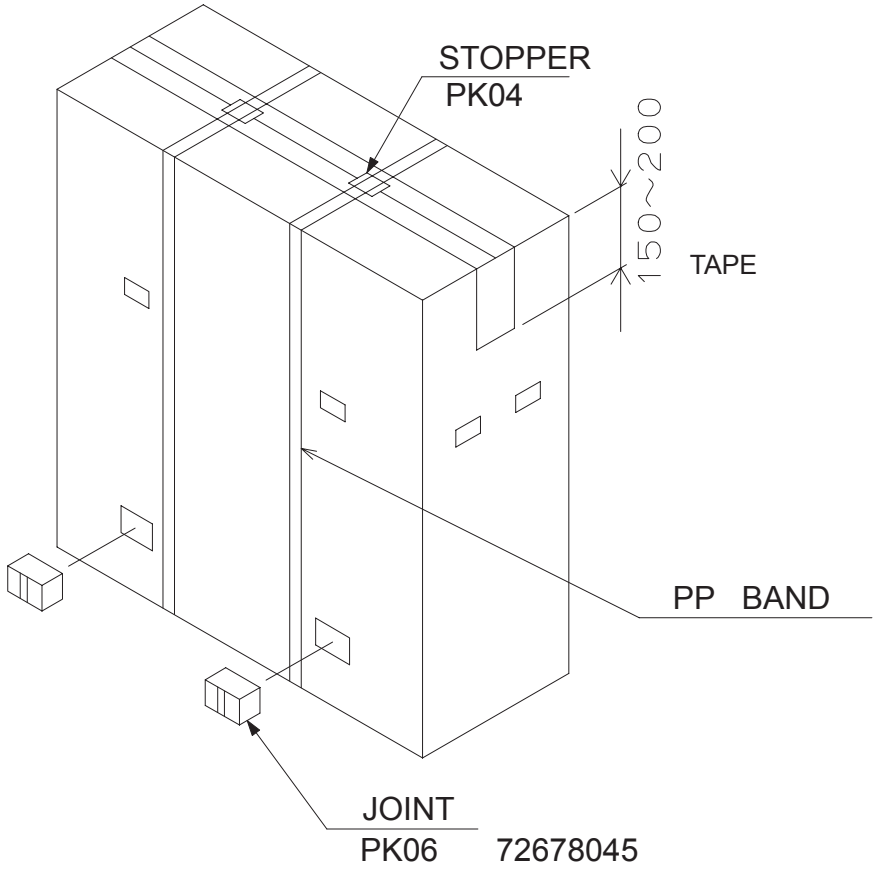


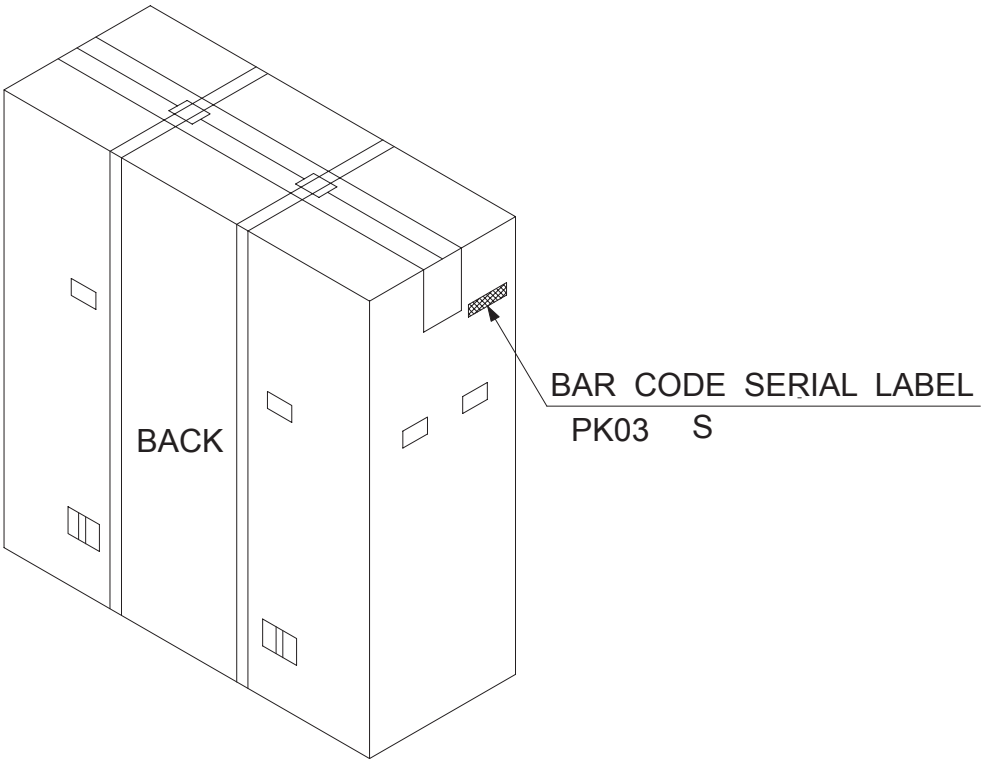
4. ACCESSORY BOX



5.CARTON BOX


CARTON BOX T(50XM2)
PK14 72790199 50HP82
72790184 50XP26H,K,R
FRONT
PK03 BAR CODE SERIAL LABEL
PILLER T
PK10
SPACER TR
PK09 72790180
SPACER TL
PK08
72790179
PROTECTION SHEET
PK07
PILLER S
PK34
SPACER BR
PK12 72790182
72790183
SPACER BC
PK13
ACCESSORY BOX (W)
SPACER BL
PK11
72790181
CARTON BOX B
PK15
72790185
PILLER S
PK34
PROTECTION SHEET
TAPE
PILLER T


STOPPER
PK04
150~200
TAPE
PP BAND
JOINT
PK06 72678045


BACK
BAR CODE SERIAL LABEL
PK03 S

PART LIST

Notes:

1. Parts orders must contain model name, parts number and parts name.
2. When you place an order for spare parts, please refer to the respective service manual and mention the right parts number on your P.O. sheets
3. The letters NSP in the table indicate non-service parts.
4. Please refer to METHOD OF DISASSEMBLY or PACKAGING of servicemanual about a parts layout.

50HP82				
SYNBOL	PARTS NAME	PARTS NO.	PARTS NO.	Q'TY
*** PDP MODULE ***				
P01	PDP NP50C2MF01, 50P2500	72700017	09S900017	1
*** PWB ASSYS ***				
A01	PC BOARD ASSY	72790194	0936N4M01	1
A0205	PC BOARD ASSY, VIDEO(PCB-5023A)	72790195	0936N4V01	1
A06	PC BOARD ASSY, DSP(PCB-5015)	72790196	0936P7D01	1
A0812	PC BOARD ASSY	72790190	0936H3S92	1
A13	PC BOARD ASSY, POWER UNIT	72701267	03S110061	1
AUNIT	AUDIO AMPLIFIER	72790157	03S130222	1
*** MISCELLANEOUS ELECTRICAL PARTS ***				
E01	FAN MOTOR, 109P1212L4D03, 50P2000	72524024	3S170001	2
E02	INLET, AC INLET 10GEEG3C	72563114	06S760006	1
CN-AD	WIRE HARNESS, CABLE 41P L250	72577074	07S530008	1
FL11	SERVICE PARTS, CORE FERRITE SF	72001822	06S170002	1
FL12	SERVICE PARTS, FERRITE CORE ZA	72001821	61605059	1
FL32	CORE FERRITE	72790222	61605166	1
*** MECHANISM PARTS ***				
M01	FRONT PANEL ASSY	72790197	029DS0471	1
M07	BUTTON, BUTTON(PWR)	72623214	024G05211	1
M26	COVER, POWER SW ASSY	72790173	029FS0021	1
M51	SPACER, SPACER(FILTER)	72681323	029J00241	4
M52	FILTER	72790198	029K00351	1
M58	COVER, BACK COVER	72790175	029P00812	1
M59	TERMINAL PANEL(VI) ASSY	72790176	029PS0621	1
M60	TERMINAL PANEL(232) ASSY	72790177	029PS0631	1
M61	PANEL, TERM(SP)	72621140	029PS0201	1
M68	SCREW	72790191	029NS0011	6
*** PRINTED & PACKING MATERIALS ***				
PSC	POWER CODE	72790162	07S550004	1
PK06	JOINT	72678045	24CS0551	4
PK08	SPACER TL	72790179	029MS1691	1
PK09	SPACER TR	72790180	029MS1701	1
PK11	SPACER BL	72790181	029MS1711	1
PK12	SPACER BR	72790182	029MS1721	1
PK13	SPACER BC	72790183	029MS1731	1
PK14	CARTON BOX TOP	72790199	029MS2121	1
PK15	CARTON BOX(B)	72790185	029MS1671	1
PK23	CABLE STEREO	72790200	07S580010	1
PK24	REM-T HAND	72790186	03S120131	1
PK25	CABLE, D-SUB 15P	72790130	07S580006	1
PK26	BAG, POLYETHYLENE	72790187	24806961	1
PK281	INST(ENGLISH)	72790201	07S800701	1
PK282	INST(FRE)	72790202	07S800711	1
PK283	INST(SPA)	72790203	07S800721	1
PK35	ACCESSORY BOX	72790142	029MS1641	1

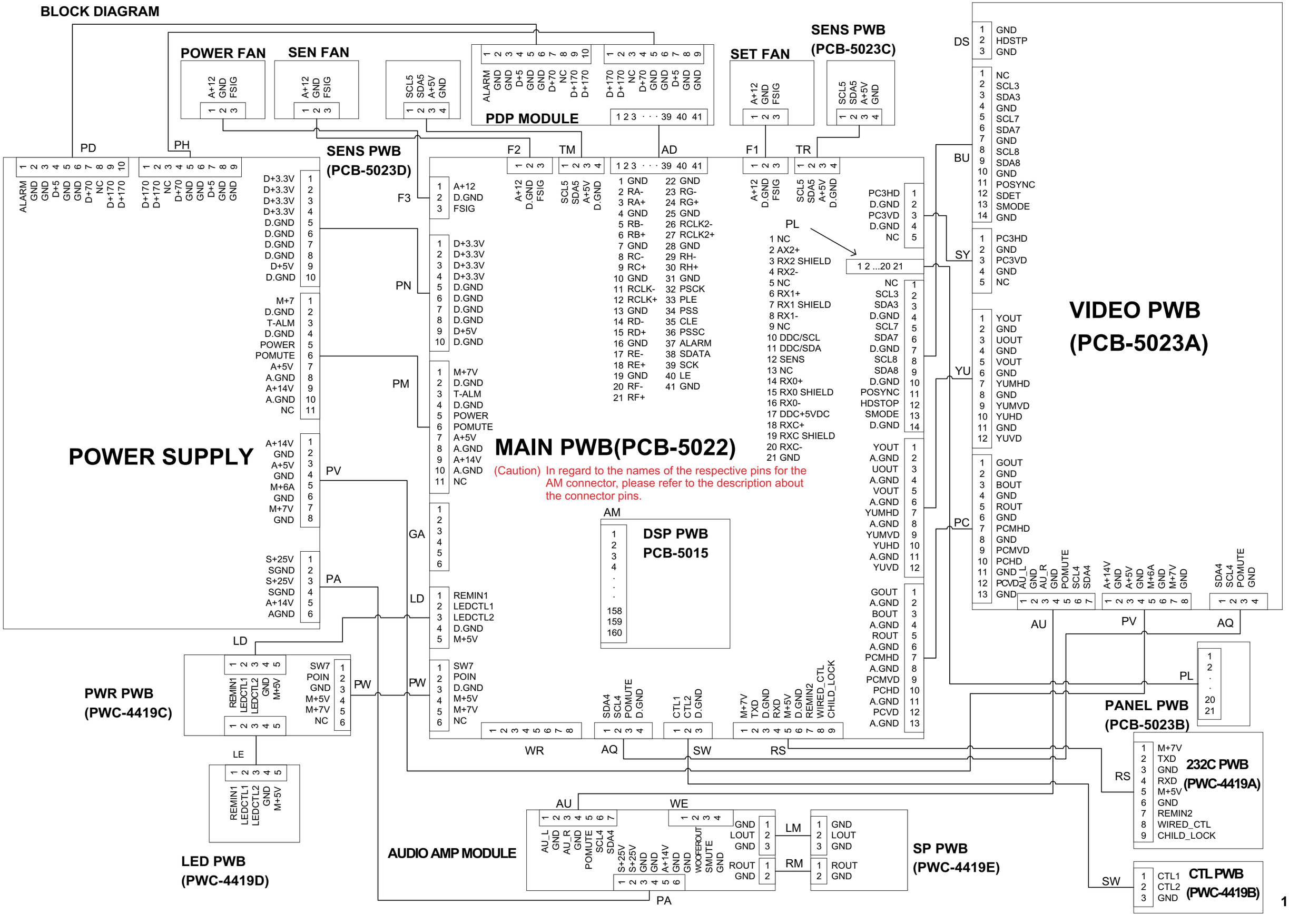
50XP26H				
SYNBOL	PARTS NAME	PARTS NO.	PARTS NO.	Q'TY
*** PDP MODULE ***				
P01	PDP NP50C2MF01, 50P2500	72700017	09S900017	1
*** PWB ASSYS ***				
A01	PC BOARD ASSY	72790169	0936N9M01	1
A0205	PC BOARD ASSY, VIDEO(PCB-5023A)	72790170	0936N9V01	1
A06	PC BOARD ASSY, DSP(PCB-5015)	72701266	0936H3D01	1
A0812	PC BOARD ASSY	72790171	0936H3S91	1
A13	PC BOARD ASSY, POWER UNIT	72701267	03S110061	1
AUNIT	AUDIO AMPLIFIER	72790157	03S130222	1
*** MISCELLANEOUS ELECTRICAL PARTS ***				
E01	FAN MOTOR, 109P1212L4D03, 50P2000	72524024	3S170001	2
E02	INLET, AC INLET 10GEEG3C	72563114	06S760006	1
CN-AD	WIRE HARNESS, CABLE 41P L250	72577074	07S530008	1
FL11	SERVICE PARTS, CORE FERRITE SF	72001822	06S170002	1
FL12	SERVICE PARTS, FERRITE CORE ZA	72001821	61605059	1
FL32	CORE FERRITE	72790222	61605166	1
*** MECHANISM PARTS ***				
M01	FRONT PANEL ASSY	72790172	029DS0421	1
M07	BUTTON, BUTTON(PWR)	72623214	024G05211	1
M26	COVER, POWER SW ASSY	72790173	029FS0021	1
M51	SPACER, SPACER(FILTER)	72681323	029J00241	4
M52	FILTER	72790174	029K00261	1
M58	COVER, BACK COVER	72790175	029P00812	1
M59	TERMINAL PANEL(VI) ASSY	72790176	029PS0621	1
M60	TERMINAL PANEL(232) ASSY	72790177	029PS0631	1
M61	PANEL, TERM(SP)	72621140	029PS0201	1
M68	SCREW	72790178	024N04431	6
*** PRINTED & PACKING MATERIALS ***				
PSC	POWER CORD	72790156	07S550003	1
PK06	JOINT	72678045	24CS0551	4
PK08	SPACER TL	72790179	029MS1691	1
PK09	SPACER TR	72790180	029MS1701	1
PK11	SPACER BL	72790181	029MS1711	1
PK12	SPACER BR	72790182	029MS1721	1
PK13	SPACER BC	72790183	029MS1731	1
PK14	CARTON BOX TOP	72790184	029MS1891	1
PK15	CARTON BOX(B)	72790185	029MS1671	1
PK23	CABLE, STEREO MINI	72790128	07S580013	1
PK24	REM-T HAND	72790186	03S120131	1
PK25	CABLE, D-SUB 15P	72790130	07S580006	1
PK26	BAG, POLYETHYLENE	72790187	24806961	1
PK281	INST(ENGLISH)	72790188	07S800621	1
PK282	INST(CHINESE)	72790189	07S800631	1
PK35	ACCESSORY BOX	72790142	029MS1641	1
PK41	CONNECTOR, BNC/P-RCA	72790133	06S750001	

50XP26K				
SYNBOL	PARTS NAME	PARTS NO.	PARTS NO.	Q'TY
*** PDP MODULE ***				
P01	MODULE, PDP NP50C2MF01, 50P2500	72700017	09S900017	1
*** PWB ASSYS ***				
A01	PC BOARD ASSY	72790169	0936N9M01	1
A0205	PC BOARD ASSY, VIDEO(PCB-5023A)	72790170	0936N9V01	1
A06	PC BOARD ASSY, DSP(PCB-5015)	72701266	0936H3D01	1
A0812	PC BOARD ASSY	72790171	0936H3S91	1
A13	PC BOARD ASSY, POWER UNIT	72701267	03S110061	1
AUNIT	AUDIO AMPLIFIER	72790157	03S130222	1
*** MISCELLANEOUS ELECTRICAL PARTS ***				
E01	FAN MOTOR, 109P1212L4D03, 50P2000	72524024	3S170001	2
E02	INLET, AC INLET 10GEEG3C	72563114	06S760006	1
CN-AD	WIRE HARNESS, CABLE 41P L250	72577074	07S530008	1
FL11	SERVICE PARTS, CORE FERRITE SF	72001822	06S170002	1
FL12	SERVICE PARTS, FERRITE CORE ZA	72001821	61605059	1
FL32	CORE FERRITE	72790222	61605166	1
*** MECHANISM PARTS ***				
M01	FRONT PANEL ASSY	72790172	029DS0421	1
M07	BUTTON, BUTTON(PWR)	72623214	024G05211	1
M26	COVER, POWER SW ASSY	72790173	029FS0021	1
M51	SPACER, SPACER(FILTER)	72681323	029J00241	1
M52	FILTER	72790174	029K00261	4
M58	COVER, BACK COVER	72790175	029P00812	1
M59	TERMINAL PANEL(VI) ASSY	72790176	029PS0621	1
M60	TERMINAL PANEL(232) ASSY	72790177	029PS0631	1
M61	PANEL, TERM(SP)	72621140	029PS0201	1
M68	SCREW	72790178	024N04431	6
*** PRINTED & PACKING MATERIALS ***				
PSC	POWER CODE	72790162	07S550004	1
PK06	JOINT	72678045	24CS0551	4
PK08	SPACER TL	72790179	029MS1691	1
PK09	SPACER TR	72790180	029MS1701	1
PK11	SPACER BL	72790181	029MS1711	1
PK12	SPACER BR	72790182	029MS1721	1
PK13	SPACER BC	72790183	029MS1731	1
PK14	CARTON BOX TOP	72790184	029MS1891	1
PK15	CARTON BOX(B)	72790185	029MS1671	1
PK23	CABLE, STEREO MINI	72790128	07S580013	1
PK24	REM-T HAND	72790186	03S120131	1
PK25	CABLE, D-SUB 15P	72790130	07S580006	1
PK26	BAG, POLYETHYLENE	72790187	24806961	1
PK28	INST(KOREAN)	72790193	07S800611	1
PK35	ACCESSORY BOX	72790142	029MS1641	1
PK41	CONNECTOR, BNC/P-RCA	72790133	06S750001	1

50XP26R				
SYNBOL	PARTS NAME	PARTS NO.	PARTS NO.	Q'TY
*** PDP MODULE ***				
P01	PDP NP50C2MF01, 50P2500	72700017	09S900017	1
*** PWB ASSYS ***				
A01	PC BOARD ASSY	72790169	0936N9M01	1
A0205	PC BOARD ASSY, VIDEO(PCB-5023A)	72790170	0936N9V01	1
A06	PC BOARD ASSY, DSP(PCB-5015)	72701266	0936H3D01	1
A0812	PC BOARD ASSY	72790171	0936H3S91	1
A13	PC BOARD ASSY, POWER UNIT	72701267	03S110061	1
AUNIT	AUDIO AMPLIFIER	72790157	03S130222	1
*** MISCELLANEOUS ELECTRICAL PARTS ***				
E01	FAN MOTOR, 109P1212L4D03, 50P2000	72524024	3S170001	2
E02	INLET, AC INLET 10GEEG3C	72563114	06S760006	1
CN-AD	WIRE HARNESS, CABLE 41P L250	72577074	07S530008	1
FL11	SERVICE PARTS, CORE FERRITE SF	72001822	06S170002	1
FL12	SERVICE PARTS, FERRITE CORE ZA	72001821	61605059	1
FL32	CORE FERRITE	72790222	61605166	1
*** MECHANISM PARTS ***				
M01	FRONT PANEL ASSY	72790172	029DS0421	1
M07	BUTTON POWER	72790136	024G05211	1
M26	COVER, POWER SW ASSY	72790173	029FS0021	1
M51	SPACER, SPACER(FILTER)	72681323	029J00241	1
M52	FILTER	72790174	029K00261	1
M58	COVER, BACK COVER	72790175	029P00812	
M59	TERMINAL PANEL(VI) ASSY	72790176	029PS0621	
M60	TERMINAL PANEL(232) ASSY	72790177	029PS0631	1
M61	PANEL, TERM(SP)	72621140	029PS0201	1
M68	SCREW	72790178	024N04431	1
*** PRINTED & PACKING MATERIALS ***				
PSC	POWER CODE	72790225	70800089	1
PK06	JOINT	72678045	24CS0551	4
PK08	SPACER TL	72790179	029MS1691	1
PK09	SPACER TR	72790180	029MS1701	1
PK11	SPACER BL	72790181	029MS1711	1
PK12	SPACER BR	72790182	029MS1721	1
PK13	SPACER BC	72790183	029MS1731	1
PK14	CARTON BOX TOP	72790184	029MS1891	1
PK15	CARTON BOX(B)	72790185	029MS1671	1
PK23	CABLE, STEREO MINI	72790128	07S580013	1
PK24	REM-T HAND	72790186	03S120131	1
PK25	CABLE, D-SUB 15P, 42WP26H	72790130	07S580006	1
PK26	BAG, POLYETHYLENE	72790187	24806961	1
PK281	INST(ENGLISH)	72790188	07S800621	1
PK282	INST(CHINESE)	72790189	07S800631	1
PK35	ACCESSORY BOX	72790142	029MS1641	1

CONNECTION DIAGRAMS

BLOCK DIAGRAM



Connector pin descriptions

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
MAIN-VIDEO	DS					
		1	GND	GND		
		2	HDSTP	Video mute control of chroma signal	Turned LO when the DS connector is available, and video output is generated. Turned HI when no DS connector is available, and video output is muted.	
		3	GND	GND		
MAIN-VIDEO	BU					
		1	NC			
		2	SCL3	CLK of the I2C bus	Control signal of IC5001, 5305, and 5306	MAIN → VIDEO
		3	SDA3	DATA of the I2C bus	Control signal of IC5001, 5305, and 5306	MAIN → VIDEO
		4	GND	GND		
		5	SCL7	CLK of the I2C bus	Control signal of IC5501 and 5505	MAIN → VIDEO
		6	SDA7	DATA of the I2C bus	Control signal of IC5501 and 5505	MAIN → VIDEO
		7	GND	GND		
		8	SCL8	CLK of the I2C bus	For extension I/O	MAIN → VIDEO
		9	SDA8	DATA of the I2C bus	For extension I/O	VIDEO → MAIN
		10	GND			
		11	POSYNC	Power control for power management	Power ON with HI	VIDEO → MAIN
		12	SDET	Insertion detect signal for the S terminal	Presence of S terminal identified with HI	VIDEO → MAIN
		13	MODE	Mode control signal of S1/S2 terminal	Usually LO. S1: 5V, S2:2.5V	VIDEO → MAIN
		14	GND	GND		
MAIN-VIDEO	SY					
		1	PC3HD	Horizontal sync signal for PC signal (digital input)	Horizontal sync signal for PC signal of digital input	NAIN → VIDEO
		2	GND	GND		
		3	PC3VD	Vertical sync signal for PC signal (digital input)	Vertical sync signal for PC signal of digital input	MAIN → VIDEO
		4	GND	GND		
		5	NC	No-connection terminal		
MAIN-VIDEO	YU					
		1	YOUT	Chroma Y signal or VIDEO G signal	For the chroma signal, input signal is immediately output. For the video signal, each decoded original color signal is output.	VIDEO → MAIN
		2	GND	GND		
		3	UOUT	Chroma B-Y signal or VIDEO B signal	For the chroma signal, input signal is immediately output. For the video signal, each decoded original color signal is output.	VIDEO → MAIN
		4	GND	GND		
		5	VOUT	Chroma R-Y signal or VIDEO R signal	For the chroma signal, input signal is immediately output. For the video signal, each decoded original color signal is output.	VIDEO → MAIN
		6	GND	GND		
		7	YUMHD	Horizontal sync signal for microcomputer	Horizontal sync signal input to be entered in microcomputer when a chroma or video signal is used.	VIDEO → MAIN

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		8	GND	GND		
		9	YUMVD	Vertical sync signal for microcomputer	Vertical sync signal input to be entered in microcomputer when a chroma or video signal is used.	VIDEO → MAIN
		10	YUHD	Horizontal sync signal for A/D	Horizontal sync signal input to be entered in A/D converter when a chroma or video signal is used.	VIDEO → MAIN
		11	GND	GND		
		12	YUVD	Vertical sync signal for A/D	Vertical sync signal input to be entered in A/D converter when a chroma or video signal is used.	VIDEO → MAIN
MAIN-VIDEO	PC					
		1	GOUT	Signal G of PC	For the PC signal, an input signal is immediately output.	VIDEO → MAIN
		2	GND	GND		
		3	BOUT	Signal B of PC	For the PC signal, an input signal is immediately output.	VIDEO → MAIN
		4	GND	GND		
		5	ROUT	Signal R of PC	For the PC signal, an input signal is immediately output.	VIDEO → MAIN
		6	GND	GND		
		7	PCMHD	Horizontal sync signal for microcomputer	Horizontal sync signal input to be entered in microcomputer of the PC signal.	VIDEO → MAIN
		8	GND	GND		
		9	PCMVD	Vertical sync signal for microcomputer	Vertical sync signal input to be entered in microcomputer of the PC signal.	VIDEO → MAIN
		10	PCHD	Horizontal sync signal for A/D	Horizontal sync signal input to be entered in the A/D of the PC signal.	VIDEO → MAIN
		11	GND	GND		
		12	PCVD	Vertical sync signal for the A/D	Vertical sync signal input to be entered in the A/D of the PC signal	VIDEO → MAIN
		13	GND	GND		
VIDEO-POWER	PV					
		1	A+14V	14V power supply for analog circuit	For analog signal processing	POWER → VIDEO
		2	GND	GND		
		3	A+5V	5V power supply for analog circuit	For analog signal processing	POWER → VIDEO
		4	GND	GND		
		5	A+6V	6V power supply for analog circuit	For analog signal processing	POWER → VIDEO
		6	GND	GND		
		7	M+7V	7V power supply for microcomputer	Sync detector circuit for restoration from power management	POWER → VIDEO
		8	GND			
MAIN-VIDEO	AQ					
		1	SDA4	DATA of the I2C bus	Audio control signal	MAIN → VIDEO
		2	SCL4	CLK of the I2C bus	Audio control signal	MAIN → VIDEO
		3	POMUTE	Mute signal for Power start	Usually 4.8V	MAIN → VIDEO
		4	GND	GND		

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
VIDEO-AUDIO	AU					
		1	AU_L	Signal L	L CH for audio signal	VIDEO → AUDIO
		2	GND	GND		
		3	AU_R	Signal R	R CH for audio signal	VIDEO → AUDIO
		4	GND	GND		
		5	POMUTE	Mute signal for Power start	Usually 4.8V	VIDEO → AUDIO
		6	SCL4	CLK of the I2C bus	Audio control signal	VIDEO → AUDIO
		7	SDA4	DATA of the I2C bus	Audio control signal	VIDEO → AUDIO
RS232C-MAIN	RS					
		1	M+7V	7V power supply; the same as for microcomputer		MAIN → RS232C
		2	TXD	RS-232 driver output		MAIN → RS232C
		3	GND	GND		
		4	RXD	RS-232 receiver input		MAIN → RS232C
		5	M+5V	5V power supply; the same as for microcomputer		MAIN → RS232C
		6	GND	GND		
		7	REMIN2	Data signal for the wired remote control		RS232C → MAIN
		8	WIRED_CTL	Insertion control of the wired remote control	Usually 5V. 0V when inserted.	RS232C → MAIN
		9	CHILD_LOCK	Child lock control	0V for SW OFF. 5V for SW ON.	RS232C → MAIN
MAIN-SENT MAIN-SENS	TM TR					
		1	SCL5	CLK of the I2C bus	For temperature sensor	MAIN → SENS
		2	SDA5	DATA of the I2C bus	For temperature sensor	MAIN → SENS
		3	A+5V	5V power supply for ANALOG		MAIN → SENS
		4	GND	GND		
MAIN-PDP MODULE	AD					
		1	GND	GND		
		2	RA-	VIDEO input A-		MAIN → PDPMODULE
		3	RA+	VIDEO input A+		MAIN → PDPMODULE
		4	GND	GND		
		5	RB-	VIDEO input B-		MAIN → PDPMODULE
		6	RB+	VIDEO input B+		MAIN → PDPMODULE
		7	GND	GND		
		8	RC-	VIDEO input C-		MAIN → PDPMODULE
		9	RC+	VIDEO input C+		MAIN → PDPMODULE
		10	GND	GND		
		11	RCLK-	CKL- for VIDEO		MAIN → PDPMODULE
		12	RCLK+	CKL+ for VIDEO		MAIN → PDPMODULE
		13	GND	GND		
		14	RD-	VIDEO input D-		MAIN → PDPMODULE
		15	RD+	VIDEO input D+		MAIN → PDPMODULE
		16	GND	GND		
		17	RE-	VIDEO input E-		MAIN → PDPMODULE
		18	RE+	VIDEO input E+		MAIN → PDPMODULE
		19	GND	GND		

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		20	RF-	VIDEO input F-		MAIN → PDPMODULE
		21	RF+	VIDEO input F+		MAIN → PDPMODULE
		22	GND	GND		
		23	RG-	VIDEO input G-		MAIN → PDPMODULE
		24	RG+	VIDEO input G+		MAIN → PDPMODULE
		25	GND	GND		
		26	RCLK2-	CKL2- for VIDEO		MAIN → PDPMODULE
		27	RCLK2+	CKL2+ for VIDEO		MAIN → PDPMODULE
		28	GND	GND		
		29	RH-	VIDEO input H-		MAIN → PDPMODULE
		30	RH+	VIDEO input H+		MAIN → PDPMODULE
		31	GND	GND		
		32	PSCK	CLK for power save data I/O		MAIN → PDPMODULE
		33	PLE	PSS read enable		MAIN → PDPMODULE
		34	PSS	Average signal level data output for power save		PDPMODULE → MAIN
		35	CLE	PSS latch enable		MAIN → PDPMODULE
		36	PSSC	Control data input for power save		MAIN → PDPMODULE
		37	ALARM	Panel break alarm signal		PDPMODULE → MAIN
		38	SDATA	Serial data for various data setting		MAIN → PDPMODULE
		39	SCK	Serial CLK		MAIN → PDPMODULE
		40	LE	Serial data latch enable		MAIN → PDPMODULE
		41	GND	GND		
MAIN-SENT FAN	F1					
	F2	1	A+12V	12V power supply for ANALOG signal		MAIN → FAN
	F3	2	GND	GND		
		3	FSIG	FAN alarm signal		FAN → MAIN
MAIN-POWER SUPPLY	PM					
		1	M+7V	7V power supply for microcomputer		POWER → MAIN
		2	D.GND	GND		
		3	T-ALM	Alarm signal	Usually H	POWER → MAIN
		4	D.GND			
		5	POWER	Power supply control	Usually H	POWER → MAIN
		6	POMUTE	Mute signal for power supply starting	Usually H	POWER → MAIN
		7	A+5V	5V power supply for ANALOG signal		POWER → MAIN
		8	A.GND	GND		POWER → MAIN
		9	A+14V	14V power supply for ANALOG signal		POWER → MAIN
		10	A.GND	GND		POWER → MAIN
		11	NC			
MAIN-POWER SUPPLY	PN					
		1	D+3.3V	3.3V for DIGITAL		POWER → MAIN
		2	D+3.3V	3.3V for DIGITAL		POWER → MAIN
		3	D+3.3V	3.3V for DIGITAL		POWER → MAIN
		4	D+3.3V	3.3V for DIGITAL		POWER → MAIN
		5	D.GND	GND		

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		6	D.GND	GND		
		7	D.GND	GND		
		8	D.GND	GND		
		9	D+5V	5V for DIGITAL		POWER → MAIN
		10	D.GND	GND		
MAIN-LED	LD LE					
		1	REMIN1	Infrared ray remote control data		LED → MAIN
		2	LEDCTL1	Standby LED control		MAIN → LED
		3	LEDCTL2	Standby LED control		MAIN → LED
		4	GND	GND		
		5	M+5V	5V power supply for microcomputer		MAIN → LED
MAIN-PWR	PW					
		1	SW7	Power supply starting control	Usually 6.8V	MAIN → PW
		2	POIN	Power supply starting detection	Usually 5V	PW → MAIN
		3	GND	GND		
		4	M+5V	5V power supply for microcomputer		MAIN → PW
		5	M+7V	7V power supply for microcomputer		MAIN → PW
		6	NC	No-connection terminal		
MAIN-SW	SW					
		1	CTL1	Key input detection		SW → MAIN
		2	CTL2	Key input detection		SW → MAIN
		3	GND	GND		
AUDIO-POWER SUPPLY	PA					
		1	S+25V	+25V power supply for audio circuit		POWER → AUDIO
		2	S+25V	+26V power supply for audio circuit		POWER → AUDIO
		3	GND	GND		
		4	GND	GND		
		5	A+14V	14V power ANALOG circuit		POWER → AUDIO
		6	GND	GND		
POWER SUPPLY-PDP MODULE	PD					
		1	ALARM	Module alarm signal		MODULE → POWER
		2	GND	GND		
		3	GND	GND		
		4	D+5V	5V power supply for DIGITAL circuit		POWER → MODULE
		5	GND	GND		
		6	GND	GND		
		7	D+70	70V power supply for DIGITAL circuit		POWER → MODULE
		8	NC	No-connection terminal		
		9	D+170	170V power supply for DIGITAL circuit		POWER → MODULE
		10	D+170	170V power supply for DIGITAL circuit		POWER → MODULE
POWER SUPPLY-PDP MODULE	PH					
		1	D+170	170V power supply for DIGITAL circuit		POWER → MODULE

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		2	D+170	170V power supply for DIGITAL circuit		POWER → MODULE
		3	NC	No-connection terminal		
		4	D+70	70V power supply for DIGITAL circuit		POWER → MODULE
		5	GND	GND		
		6	GND	GND		
		7	D+5	5V power supply for DIGITAL circuit		POWER → MODULE
		8	GND	GND		
		9	GND	GND		
MIAN-PL	PL					
(Note : MAIN PWB		1	NC	No-connection terminal		
No. is applied to		2	RX2+	Serial signal R (+ side)		PL → MAIN
the PIN No.)		3	GND	GND		
		4	RX2-	Serial signal R (- side)		PL → MAIN
		5	NC	No-connection terminal		
		6	RX1+	Serial signal G (+ side)		PL → MAIN
		7	GND	GND		
		8	RX1-	Serial signal G (- side)		PL → MAIN
		9	NC	No-connection terminal		
		10	DDC/SCL	CLK of the I2C bus for DDC writing		PL → MAIN
		11	DDC/SDA	DATA of the I2C bus for DDC writing		PL → MAIN
		12	SENS	Power supply detection		MAIN → PL
		13	NC	No-connection terminal		
		14	RX0+	Serial signal B (+ side)		PL → MAIN
		15	GND	GND		
		16	RX0-	Serial signal B (- side)		PL → MAIN
		17	DDC5V	5V power supply for DDC		MAIN → PL
		18	RXC+	CLK serial signal (+ side)		PL → MAIN
		19	GND	GND		
		20	RXC-	CLK serial signal (- side)		PL → MAIN
		21	GND	GND		
AUDIO-SPEAKER	LM					
		1	GND	GND		
		2	LOUT	Left-side speaker output		AUDIO → SPEAKER
		3	GND			
AUDIO-SPEAKER	RM					
		1	ROUT	Right-side speaker output		AUDIO → SPEAKER
		2	GND	GND		
MAIN-DSP	AM					
		1	NC			
		2	AMDP_CK2	Not used		
		3	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		4	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		5	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		6	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		7	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		8	GND2	GND		

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		9	GND2	GND		
		10	GND2	GND		
		11	GND2	GND		
		12	GND2	GND		
		13	ENAMDP	Not used		
		14	SCL1	Clock line for the I2C bus	For DSP	MAIN → DSP
		15	SDA1	Data line for the I2C bus	For DSP	MAIN → DSP
		16	SDA_AMDP	Data line for the I2C bus	For DSP	DSP → MAIN
		17	XRST	Reset signal for the DSP circuit	5V for normal operation	MAIN → DSP
		18	GND2	GND		
		19	SYSCLK	System lock signal for the DSP circuit	10MHz	MAIN → DSP
		20	GND2	GND		
		21	VIO_BODD7	Digital video signal (B)	MSB	DSP → MAIN
		22	VIO_BODD6	Digital video signal (B)		DSP → MAIN
		23	VIO_BODD5	Digital video signal (B)		DSP → MAIN
		24	VIO_BODD4	Digital video signal (B)		DSP → MAIN
		25	GND2	GND		
		26	VIO_BODD3	Digital video signal (B)		DSP → MAIN
		27	VIO_BODD2	Digital video signal (B)		DSP → MAIN
		28	VIO_BODD1	Digital video signal (B)		DSP → MAIN
		29	VIO_BODD0	Digital video signal (B)	LSB	DSP → MAIN
		30	GND2	GND		
		31	VPUT_BEV7	Digital video signal (B)	MSB	DSP → MAIN
		32	VPUT_BEV6	Digital video signal (B)		DSP → MAIN
		33	VPUT_BEV5	Digital video signal (B)		DSP → MAIN
		34	VPUT_BEV4	Digital video signal (B)		DSP → MAIN
		35	GND2	GND		
		36	VPUT_BEV3	Digital video signal (B)		DSP → MAIN
		37	VPUT_BEV2	Digital video signal (B)		DSP → MAIN
		38	VPUT_BEV1	Digital video signal (B)		DSP → MAIN
		39	VPUT_BEV0	Digital video signal (B)	LSB	DSP → MAIN
		40	GND2	GND		
		41	VIO_GODD7	Digital video signal (G)	MSB	DSP → MAIN
		42	VIO_GODD6	Digital video signal (G)		DSP → MAIN
		43	VIO_GODD5	Digital video signal (G)		DSP → MAIN
		44	VIO_GODD4	Digital video signal (G)		DSP → MAIN
		45	GND2	GND		
		46	VIO_GODD3	Digital video signal (G)		DSP → MAIN
		47	VIO_GODD2	Digital video signal (G)		DSP → MAIN
		48	VIO_GODD1	Digital video signal (G)		DSP → MAIN
		49	VIO_GODD0	Digital video signal (G)	LSB	DSP → MAIN
		50	GND2	GND		
		51	VOUT_GEV7	Digital video signal (G)	MSB	DSP → MAIN
		52	VOUT_GEV6	Digital video signal (G)		DSP → MAIN
		53	VOUT_GEV5	Digital video signal (G)		DSP → MAIN
		54	VOUT_GEV4	Digital video signal (G)		DSP → MAIN
		55	GND2	GND		
		56	VOUT_GEV3	Digital video signal (G)		DSP → MAIN

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		57	VOUT_GEV2	Digital video signal (G)		DSP → MAIN
		58	VOUT_GEV1	Digital video signal (G)		DSP → MAIN
		59	VOUT_GEV0	Digital video signal (G)	LSB	DSP → MAIN
		60	GND2	GND		
		61	VIO_RODD7	Digital video signal (R)	MSB	DSP → MAIN
		62	VIO_RODD6	Digital video signal (R)		DSP → MAIN
		63	VIO_RODD5	Digital video signal (R)		DSP → MAIN
		64	VIO_RODD4	Digital video signal (R)		DSP → MAIN
		65	GND2	GND		
		66	VIO_RODD3	Digital video signal (R)		DSP → MAIN
		67	VIO_RODD2	Digital video signal (R)		DSP → MAIN
		68	VIO_RODD1	Digital video signal (R)		DSP → MAIN
		69	VIO_RODD0	Digital video signal (R)	LSB	DSP → MAIN
		70	GND2	GND		
		71	VOUT_REV7	Digital video signal (R)	MSB	DSP → MAIN
		72	VOUT_REV6	Digital video signal (R)		DSP → MAIN
		73	VOUT_REV5	Digital video signal (R)		DSP → MAIN
		74	VOUT_REV4	Digital video signal (R)		DSP → MAIN
		75	GND	GND		
		76	VOUT_REV3	Digital video signal (R)		DSP → MAIN
		77	VOUT_REV2	Digital video signal (R)		DSP → MAIN
		78	VOUT_REV1	Digital video signal (R)		DSP → MAIN
		79	VOUT_REV0	Digital video signal (R)	LSB	DSP → MAIN
		80	GND	GND		
		81	AMDP_H2	Not used		
		82	AMDP_V2	Not used		
		83	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		84	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		85	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		86	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		87	VDD3	3.3V power supply for DIGITAL	3.3V for normal operation	MAIN → DSP
		88	GND2	GND		
		89	GND2	GND		
		90	GND2	GND		
		91	GND2	GND		
		92	GND2	GND		
		93	GND2	GND		
		94	GND2	GND		
		95	AMDP_VO	Vertical sync signal for DSP circuit		MAIN → DSP
		96	AMDP_HO	Horizontal sync signal for DSP circuit		MAIN → DSP
		97	GND2	GND		
		98	AMDP_CKO	Clock signal for DSP circuit		MAIN → DSP
		99	GND2	GND		
		100	GND2	GND		
		101	VIN_BODD7	Digital video signal (B/Pb)	MSB	MAIN → DSP
		102	VIN_BODD6	Digital video signal (B/Pb)		MAIN → DSP
		103	VIN_BODD5	Digital video signal (B/Pb)		MAIN → DSP
		104	VIN_BODD4	Digital video signal (B/Pb)		MAIN → DSP

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		105	GND2	GND		
		106	VIN_BODD3	Digital video signal (B/Pb)		MAIN → DSP
		107	VIN_BODD2	Digital video signal (B/Pb)		MAIN → DSP
		108	VIN_BODD1	Digital video signal (B/Pb)		MAIN → DSP
		109	VIN_BODD0	Digital video signal (B/Pb)	LSB	MAIN → DSP
		110	GND2	GND		
		111	VIN_BEV7	Digital video signal (B/Pb)	MSB	MAIN → DSP
		112	VIN_BEV6	Digital video signal (B/Pb)		MAIN → DSP
		113	VIN_BEV5	Digital video signal (B/Pb)		MAIN → DSP
		114	VIN_BEV4	Digital video signal (B/Pb)		MAIN → DSP
		115	GND2	GND		
		116	VIN_BEV3	Digital video signal (B/Pb)		MAIN → DSP
		117	VIN_BEV2	Digital video signal (B/Pb)		MAIN → DSP
		118	VIN_BEV1	Digital video signal (B/Pb)		MAIN → DSP
		119	VIN_BEV0	Digital video signal (B/Pb)	LSB	MAIN → DSP
		120	GND2	GND		
		121	VIN_GODD7	Digital video signal (G/Y)	MSB	MAIN → DSP
		122	VIN_GODD6	Digital video signal (G/Y)		MAIN → DSP
		123	VIN_GODD5	Digital video signal (G/Y)		MAIN → DSP
		124	VIN_GODD4	Digital video signal (G/Y)		MAIN → DSP
		125	GND2	GND		
		126	VIO_GODD3	Digital video signal (G/Y)		MAIN → DSP
		127	VIN_GODD2	Digital video signal (G/Y)		MAIN → DSP
		128	VIN_GODD1	Digital video signal (G/Y)		MAIN → DSP
		129	VIN_GODD0	Digital video signal (G/Y)	LSB	MAIN → DSP
		130	GND2	GND		
		131	VIN_GEV7	Digital video signal (G/Y)	MSB	MAIN → DSP
		132	VIN_GEV6	Digital video signal (G/Y)		MAIN → DSP
		133	VIN_GEV5	Digital video signal (G/Y)		MAIN → DSP
		134	VIN_GEV4	Digital video signal (G/Y)		MAIN → DSP
		135	GND2	GND		
		136	VIN_GEV3	Digital video signal (G/Y)		MAIN → DSP
		137	VIN_GEV2	Digital video signal (G/Y)		MAIN → DSP
		138	VIN_GEV1	Digital video signal (G/Y)		MAIN → DSP
		139	VIN_GEV0	Digital video signal (G/Y)	LSB	MAIN → DSP
		140	GND2	GND		
		141	VIN_RODD7	Digital video signal (R/Pr)	MSB	MAIN → DSP
		142	VIN_RODD6	Digital video signal (R/Pr)		MAIN → DSP
		143	VIN_RODD5	Digital video signal (R/Pr)		MAIN → DSP
		144	VIN_RODD4	Digital video signal (R/Pr)		MAIN → DSP
		145	GND	GND		
		146	VIN_RODD3	Digital video signal (R/Pr)		MAIN → DSP
		147	VIN_RODD2	Digital video signal (R/Pr)		MAIN → DSP
		148	VIN_RODD1	Digital video signal (R/Pr)		MAIN → DSP
		149	VIN_RODD0	Digital video signal (R/Pr)	LSB	MAIN → DSP
		150	GND2	GND		

Between PWBs	Connector name	Pin No.	Signal name	Acronym	Complementary description	Signal direction
		151	VIN_REV7	Digital video signal (R/Pr)	MSB	MAIN → DSP
		152	VIN_REV6	Digital video signal (R/Pr)		MAIN → DSP
		153	VIN_REV5	Digital video signal (R/Pr)		MAIN → DSP
		154	VIN_REV4	Digital video signal (R/Pr)		MAIN → DSP
		155	GND	GND		
		156	VIN_REV3	Digital video signal (R/Pr)		MAIN → DSP
		157	VIN_REV2	Digital video signal (R/Pr)		MAIN → DSP
		158	VIN_REV1	Digital video signal (R/Pr)		MAIN → DSP
		159	VIN_REV0	Digital video signal (R/Pr)	LSB	MAIN → DSP
		160	GND2	GND		

BLOCK DIAGRAMS

VIDEO PWB

Analog video signal
Sync & other signals
Single Line
Two or more Lines

Signal Input Terminals

VIDEO IN 1 [PHONO] — CVBS IN
VIDEO IN 2 [BNC] — CVBS IN
VIDEO IN 3 [S-Video] — Y IN, C IN
SMODE1
DVD IN 1 (DVD/HD) [PHONO] — YPbPr/YCbCr IN
AUDIO IN 1 [PHONO] — L, R
AUDIO IN 2 [PHONO] — L, R
AUDIO IN 3 [PHONO] — L, R
AUDIO 1-3 L/R IN
PC 1 IN [D-sub 15pin] — RGB, HD/VD, VD, SCL, SDA
PC 2 IN (DVD2/HD2) [BNC]
FROM SiI151 HD & VD (PC3)
IC7001

Buff
PNPWE
PNP IC5002 24LCS21AT /SN

AV Switch

VIDEO1 IN
VIDEO2 IN
VIDEO3 IN(Y)
VIDEO3 IN(C)
Y (DVD2) IN
Y (DVD1) IN
Comb Y IN
Comb C IN
CVBS OUT (V1out)
SEL Y OUT
SEL C OUT
IC5001 TA1218F
EXT PO
EXT PO
AUDIO 1-3 I N
SEL AUDIO OUT L2out/R2out

SDA, SCL
EXT PO

Buff/LFP/Amp 6MHz
Sync SEP
Amp/LFP/Buff 6MHz
Amp/LFP/Buff 6MHz

UPD64083

IC5301
Image Processor
3D Y/C
SEPARATION

SDA, SCL

TC9090AF

IC5302
3L Y/C

SDA, SCL

Buff/LFP/Amp 6MHz
Buff/LFP/Amp 6MHz

MULTI COLOR DECORDER

IC5305
TB1274AF

CVBS IN
Y1 IN
C1 IN
Y2 IN
C2 IN
E_DVD IN
FSC OUT
Video SEL OUT
Sync IN
HD1(DVD1) IN
HD2(DVD2) IN
HD, VD OUT
YS1 (DVD2)
Y OUT
UV OUT
SCP

SDA, SCL

Frequency response correction

CTI/LTI

IC5306
TDA9178

IMPROVED YUV OUT

Buff
SDA, SCL

+13V
REG. (9V)
REG. (8V)
REG. (5V)
+6V

ANALOG+5V
DIGITAL+3.3V
DIGITAL+2.5V

EXTENTION PORTS

EXT PORT IC5605 M62320
HD1AON
PC1SYNONA
PC2SYNONA
PC3SYNONA
PC3SYNONB
PC2SYNONB
PC1SYNONB
HD1BON
SCL, SDA

EXT PORT IC5961 M62320
9178IN_A
9178IN_B
PNPWE
-
-
-
-
-
SCL, SDA

EXT PORT IC5971 M62320
CVBS_A
SOG_HD_A
CVBS_B
SOG_HD_B
SYNCTL_B
MYNCTL_B
SYNCTL_A
MYNCTL_A
SCL, SDA

EXT PORT IC981 M62320
HPOLA
VPOLA
HSTATEA
VSTATEA
VSTATEB
HSTATEB
VPOLB
HPOLB
SCL, SDA

Buff
Buff
Buff
Buff
Buff
Buff
Buff
Buff
Buff
Buff

PCT SELECT Switch

IC5501
MAX4548

SDA, SCL

NON STD CVBS/YC

AMP

IC5701
AD8023

DS_A
SELECTED RGB / YUV "A"
PICTURE "A"

AMP

IC5702
AD8023

DS_B
SELECTED RGB / YUV "B"
PICTURE "B"

RGB, YUV OUTPUT
To MAIN PWB
FILTER CERCUIT

VIDEO Block
SYNC Block

FACT.MEM

IC5005
CAT24WC16

SDA, SCL

PC_HD_ SELECT_A
PC_SELECT_B

Sync. Selector

IC5502,5503 5504
SN74AHC2G66 *3

PC1 HD/VD for A
PC2 HD/VD for A
PC3 HD/VD for A
(NO SYNC ENABLE)
SELECTED HD, VD "A"

Sync. Selector

IC5602,5603 5604
SN74AHC2G66 *3

PC1 HD/VD for B
PC2 HD/VD for B
PC3 HD/VD for B
(NO SYNC ENABLE)
SELECTED HD, VD "B"

HD_A, VD_A, COMP. Sync_A
HD_B, VD_B, COMP.Sync_B
S.O.G, HD

Select Switch

IC5801
SN74AHC2G66

CVBS_A
SOG_HD_A
SOG, Comp Sync, HD sync

Select Switch

IC5901
SN74AHC2G66

CVBS_B
SOG_HD_B
SOG, Comp Sync, HD sync

Sync. Sep.

IC5802
BA7078

HD , VD
PCV_POL_A
PCV_STAT_A
PCH_POL_A
PCH_STATE_A

Sync. Sep.

IC5902
BA7078

HD , VD
PCV_POL_B
PCV_STAT_B
PCH_POL_B
PCH_STATE_B

Video/PC sync. select

IC5803 SN74HC153

MSYNCTL_A
TO CPU HD, VD
+B(Sync 5V)

Video/PC sync. select

IC5804
74ACTQ153SCX

+B(5V)
TO A/D, etc
HD, VD
MSYNCTL_B
SYNCTL_A

Video/PC sync. select

IC5903 SN74HC153

TO CPU HD, VD
+B(Sync 5V)

Video/PC sync. select

IC5904
74ACTQ153SCX

+B(5V)
TO A/D, etc
HD, VD
SYNCTL_B

HD, VD "A"
HD, VD "B"
Synchronization Signal OUT PUT

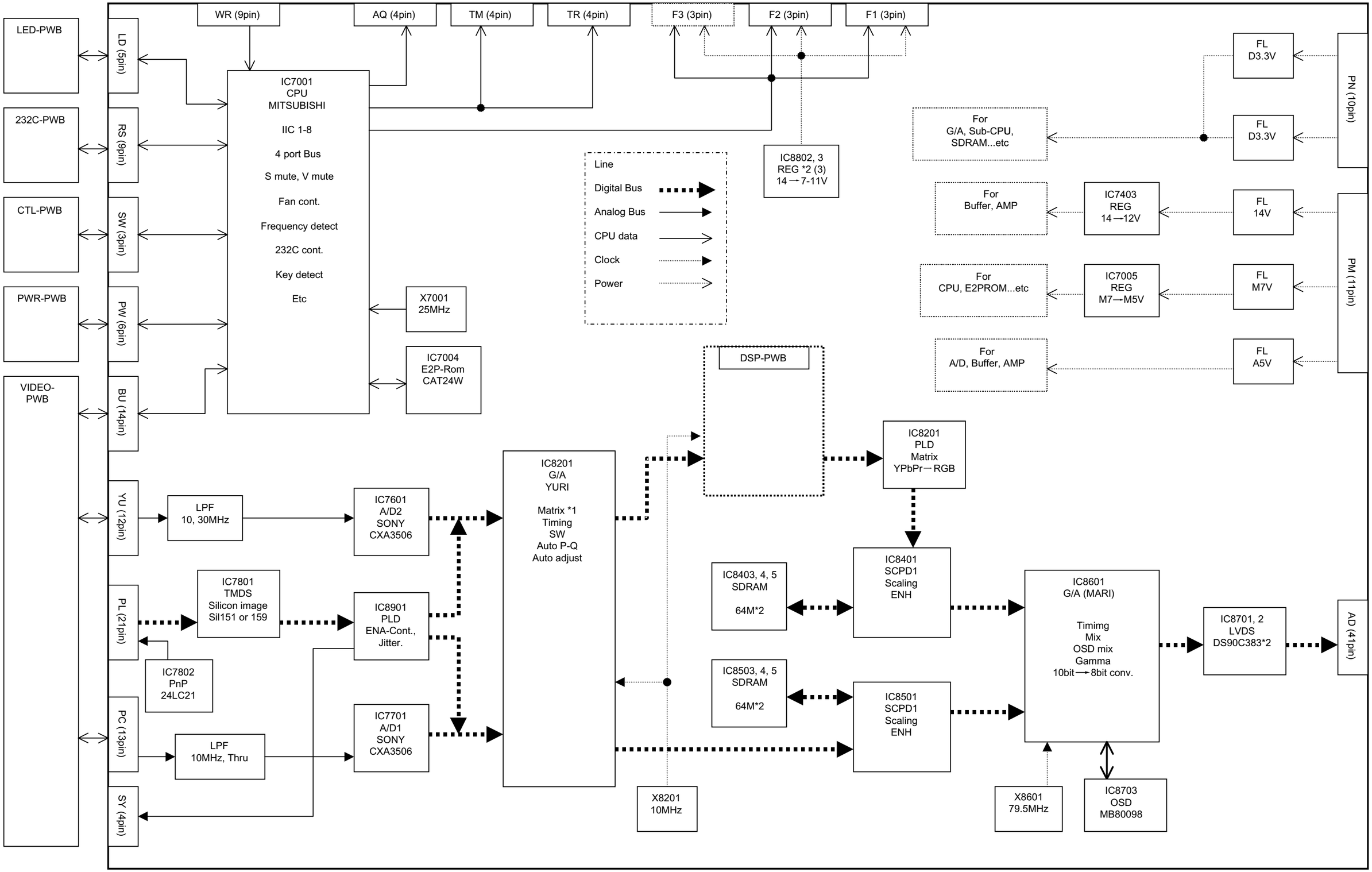
Selected L/R

TO MAIN PWB
SDA, SCL,
CTL signal

+B (13V)
+B (24V)

AUDIO BLOCK (PD-MA-2) AMP. & Sound Control

MAIN PWB


LED-PWB
232C-PWB
CTL-PWB
PWR-PWB
VIDEO-PWB
LD (5pin)
RS (9pin)
SW (3pin)
PW (6pin)
BU (14pin)
YU (12pin)
PL (21pin)
PC (13pin)
SY (4pin)
WR (9pin)
AQ (4pin)
TM (4pin)
TR (4pin)
F3 (3pin)
F2 (3pin)
F1 (3pin)
IC7001
CPU
MITSUBISHI
IIC 1-8
4 port Bus
S mute, V mute
Fan cont.
Frequency detect
232C cont.
Key detect
Etc
X7001
25MHz
IC7004
E2P-Rom
CAT24W
IC8802, 3
REG *2 (3)
14 ─ 7-11V
Line
Digital Bus
Analog Bus
CPU data
Clock
Power
FL
D3.3V
FL
D3.3V
PN (10pin)
For
G/A, Sub-CPU,
SDRAM...etc
For
Buffer, AMP
IC7403
REG
14 ─12V
FL
14V
For
CPU, E2PROM...etc
IC7005
REG
M7─M5V
FL
M7V
PM (11pin)
For
A/D, Buffer, AMP
FL
A5V
DSP-PWB
IC8201
PLD
Matrix
YPbPr ─ RGB
LPF
10, 30MHz
IC7601
A/D2
SONY
CXA3506
IC8201
G/A
YURI
Matrix *1
Timing
SW
Auto P-Q
Auto adjust
IC7801
TMDS
Silicon image
Sil151 or 159
IC8901
PLD
ENA-Cont.,
Jitter.
IC7802
PnP
24LC21
IC7701
A/D1
SONY
CXA3506
LPF
10MHz, Thru
IC8403, 4, 5
SDRAM
64M*2
IC8401
SCPD1
Scaling
ENH
IC8503, 4, 5
SDRAM
64M*2
IC8501
SCPD1
Scaling
ENH
IC8601
G/A (MARI)
Timimg
Mix
OSD mix
Gamma
10bit ─ 8bit conv.
IC8701, 2
LVDS
DS90C383*2
AD (41pin)
X8201
10MHz
X8601
79.5MHz
IC8703
OSD
MB80098

TOSHIBA CORPORATION
1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN